

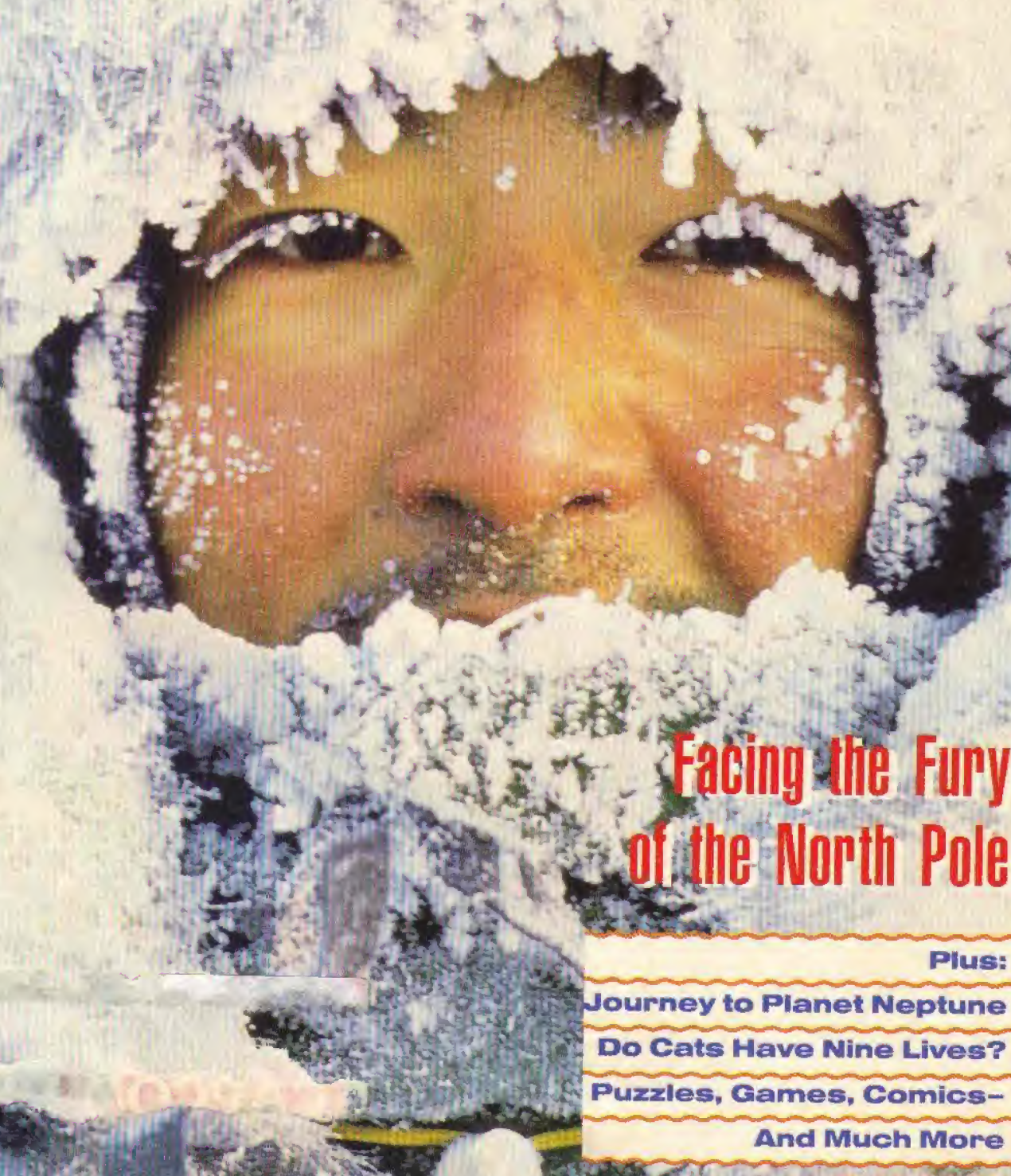
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CHILDREN'S TELEVISION WORKSHOP EXPLORES THE WORLD

Jennifer Boyde

CONTACT[®]

MARCH 1990



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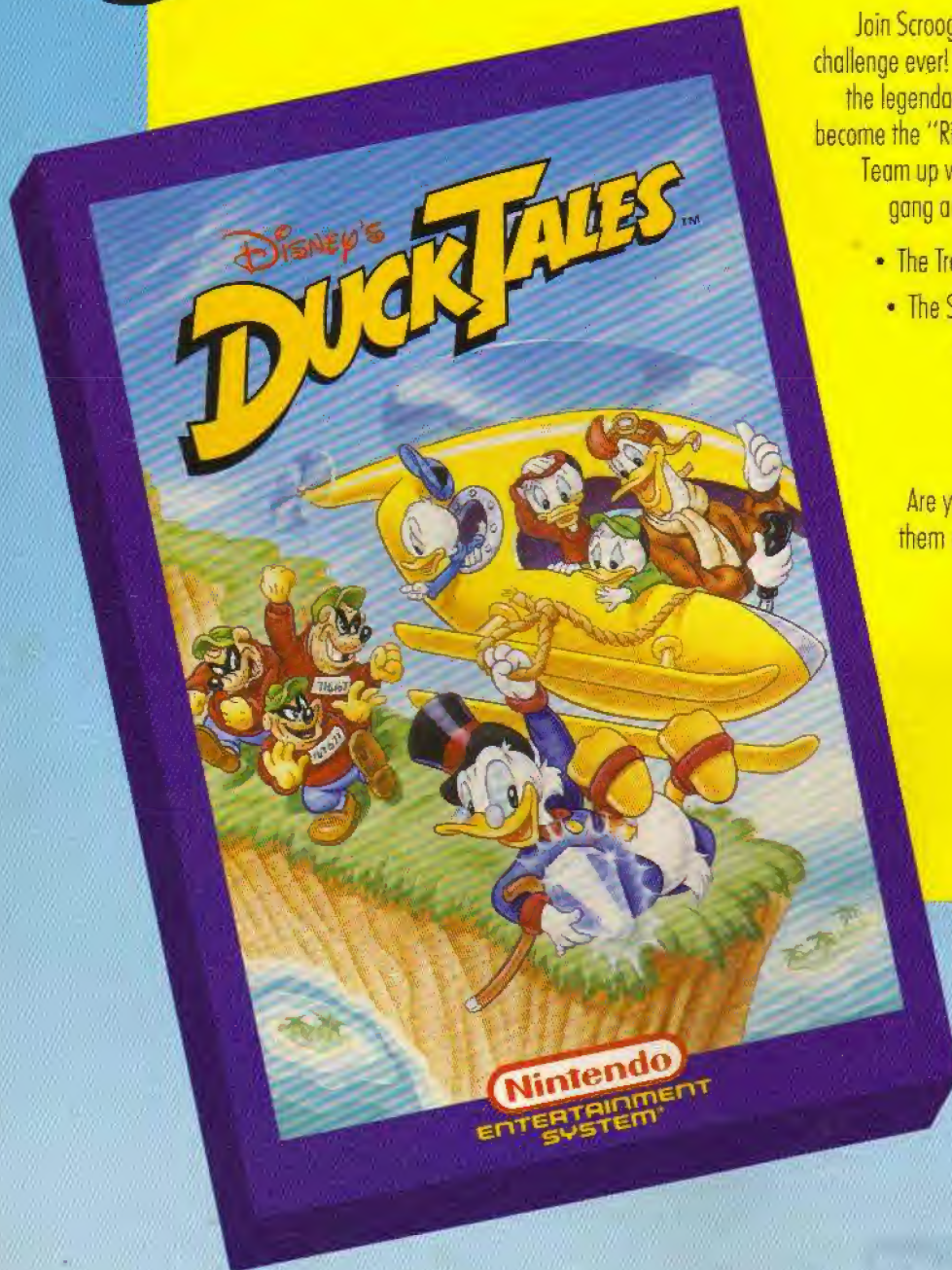
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ON OUR COVER

The Arctic climate is shown on the face of this
 Japanese explorer who walked to the North Pole.
 Photo by Beedell/© SIPA-PRESS.



Sorry, Wrong Skull

Scientists are always making new discoveries about dinosaurs. And museums have to keep up with these new discoveries. But sometimes this creates some *big* problems.

Two scientists, John McIntosh and David Berman, made a new discovery about the brontosaurus (now called apatosaurus). The scientists proved that it had a thin skull with peg-like teeth. Until this discovery, scientists believed the bronto had a short block-like head.

So, museums all over the world scrambled to put plaster casts of the right skull on the right dino. But the American Museum of Natural History in New York City had a problem.

"Our efforts to remove the old skull weakened the metal framework holding the skeleton together," says Lowell Dingus, an official at the museum. "And one rib came loose and fell."

The museum decided that rather than risk having the entire dinosaur fall down, they would leave the wrong head on the dino. Then officials opened an exhibit explaining the new findings about the apatosaurus skull.

Sleek Ships

Imagine this: You're Christopher Columbus, about to set off on a dangerous voyage in search of the New World. What kind of ship would you sail?

Until recently, experts thought that Columbus sailed in a bulky boat that could carry a lot of stuff. (You've probably seen pictures of the boat in history books.)

But recent discoveries have

changed that idea—and may change those drawings in the books. Some experts now think that the bulky boats weren't even built until *after* Columbus landed in the New World.

So what did the explorer and his crew sail on?

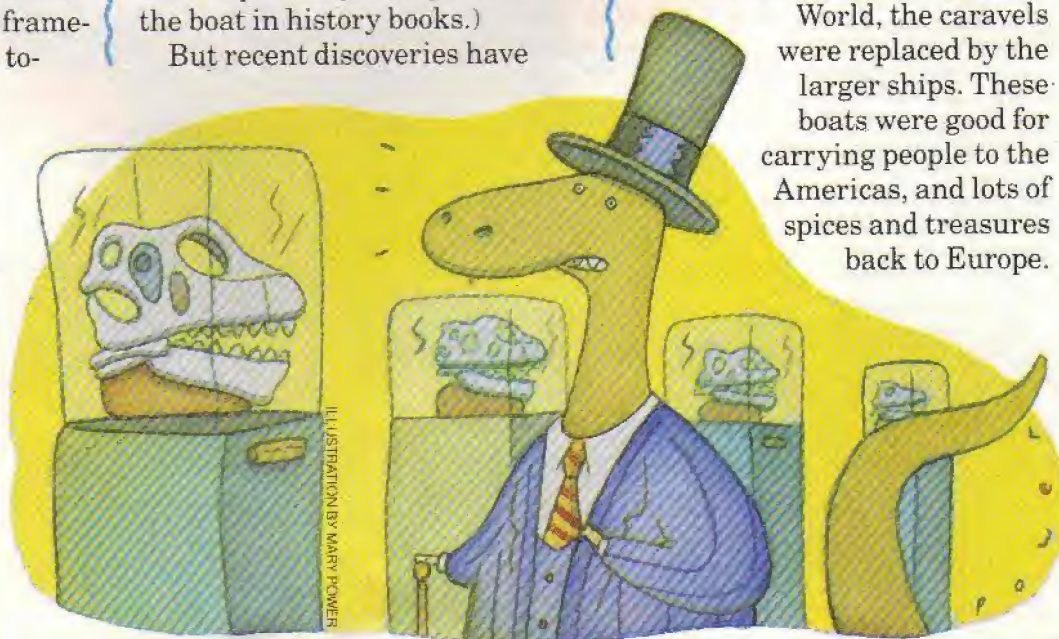
Caravels—ships that were small, fast and easy to steer along coastlines.

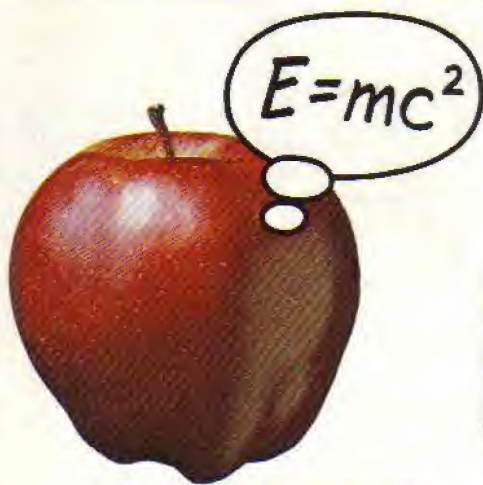
"The caravels only lasted a few decades," David Keith told



CONTACT. He is a researcher with a group that studies old ships. Once regular voyages were being made to the New

World, the caravels were replaced by the larger ships. These boats were good for carrying people to the Americas, and lots of spices and treasures back to Europe.





Is It Nap Time Yet?

Having a hard time concentrating? Try eating an apple or a bunch of grapes.

According to James Penland, a scientist at the U.S. Department of Agriculture, grapes and apples contain a mineral called "boron." Pears, leafy vege-

tables and peanuts also contain boron. Boron helps your brain stay alert.

In an experiment, Penland gave volunteers food rich in boron. Then he kept track of the people's brain-wave patterns. The scientist found that the volunteers who ate foods high in boron were more alert than those who did not eat boron-rich foods.

So, if you're looking for a quick pick-me-up, pick yourself up an apple!

PHOTO © SUPERSTOCK



Which Way Did He Go?

People in the Ganges Delta—an area in India—wear face masks on the back of their heads. Is it the latest fad? Nope, it's the best protection from Bengal tiger attacks!

The tigers live in a reserve to protect them from hunters. But people also use the reserve to find wood, honey and fish. Unfortunately, people were getting attacked by the tigers.

So, a young science student came up with the idea for the masks. Since Bengal tigers always attack their prey from behind, the tigers get confused by the masks. Now, the animals think that people are coming—when they're really going!



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science story from the news that you think our readers would like to know about. (Be sure to tell us your T-shirt size and where you

heard the story.) Send to:

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ILLUSTRATION © JACOB KNIGHT

No More Flats

Did you ever get a flat tire on your bike when you were miles from home? It may make you want to scream: "Can't they make tires that don't go flat?" Well, "they" finally listened!

A California company, UTI Chemicals, has developed an airless, foam-filled bike tire that won't go flat. The tires are made from a kind of plastic. They last about four times longer than the old-fashioned tubes. And, although they are solid, they give a cushiony ride.

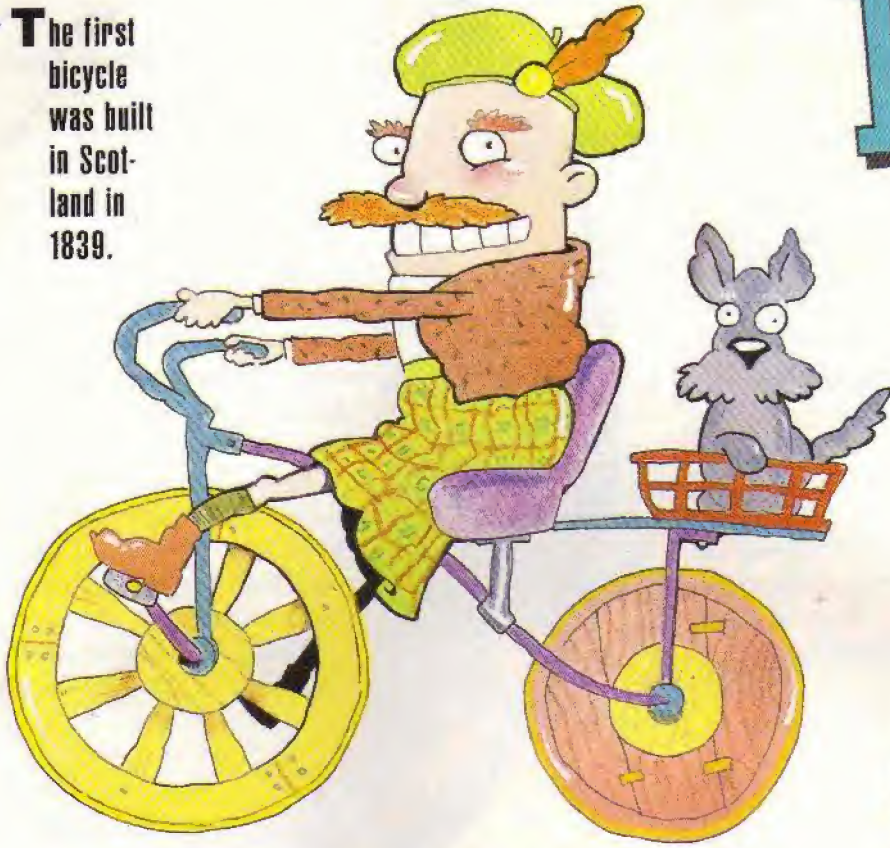
The tires aren't available yet in the U.S., but they are already in use in China.

Story idea by Paul Hottinger, Temple City, CA.



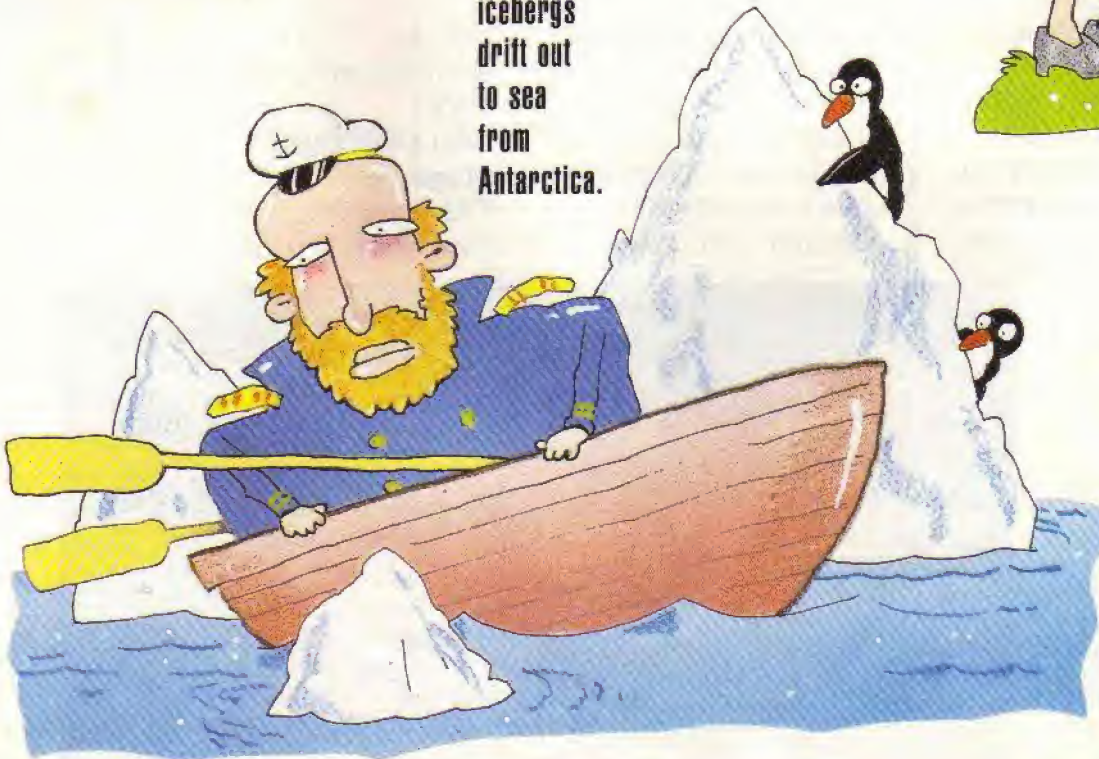
ILLUSTRATION BY ANNIE GUSMAN

► **T**he first bicycle was built in Scotland in 1839.



FACT

▼ **E**ach year, about 5,000 icebergs drift out to sea from Antarctica.

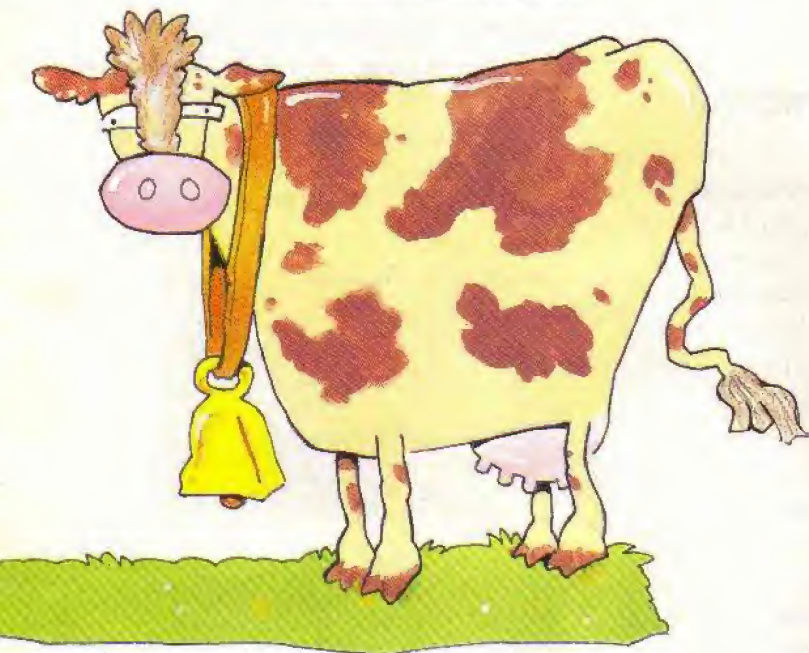


► **T**he kiwi, a New Zealand bird, has the best sense of smell of all birds. It can locate food, such as earthworms, buried a few inches underground.

ILLUSTRATIONS BY CHARLES PEALE

Olds

▼ Cows can be identified by their noseprints the same way that humans can be identified by fingerprints.



▲ At birth, the average baby boy weighs about $6\frac{1}{2}$ ounces more than the average baby girl.

► If all the blood vessels in your body were put end to end, they would stretch 12,000 miles. That's almost halfway around the world.



ANY QUESTIONS?

By Jane Rosenberg

WHY

DOESN'T IT HURT WHEN YOU GET A HAIRCUT?

Hair is a threadlike structure that grows from the skin of humans and other mammals. The root of each strand of hair is below the surface of the skin. It rests in a baglike structure called a "hair follicle." Connected to each follicle is an artery, which supplies blood to the hair cells.

In the follicle, hair cells develop rapidly. The cells begin to move upward as new cells begin to form beneath them. As the cells move higher, they are cut off from their nourishing blood supply. The hair cells harden into the same substance found in our fingernails and toenails. As the cells harden, they die. So before a strand of hair even reaches the surface of the skin, its cells are dead. Dead cells don't contain "nerve endings." Without nerve endings, pain signals can't be sent to the brain. That's lucky, or else having a haircut would be "hair-raising"!

Question sent in by Julie Saccente, Wayne, PA.

DO PEOPLE WHO ARE BLIND FROM BIRTH DREAM IN COLORS?

Someone who is blind from birth has never seen a color or a shape. Since a person's dreams are based on what happens to them while they are awake, a blind person can't have dreams with pictures in them.

But blind people do dream about what they touch or hear. For example, some blind people say they dream about food and drink. They feel things in their dreams instead of seeing them. This is because foods, drinks, surfaces and sounds are a big part of what a blind person experiences during the day.

So, in many ways, the dreams of blind people and the dreams of sighted people are similar. We all dream about the world around us. Blind people's dreams focus on what they experience with their other senses: touch, hearing, taste and smell.

Question sent in by Shannon Fletcher, Tucson, AZ.



HOW

DO PEOPLE GET SHIP MODELS INTO BOTTLES?

Sailors were the first people to build model ships in narrow-necked jars or bottles. It was a good way for the sailors to pass the long days at sea.

The model ship is constructed in sections — outside the bottle. Then different sections are placed in the bottle. The sails are also made outside the bottle. They are attached to the ship by thread. Then they are coiled and put through the bottle's neck. When the thread is pulled through, the sails are drawn to their proper size.

Finally, the model-maker uses a pair of tweezers to reach inside the bottle and put the other parts of the ship in place. It takes a lot of patience to make a model in a bottle "top-shape"!

Question sent in by Kimberly Williams, LaGrange, GA.

birds, mynas, crows and starlings are also good at repeating the sounds they hear.

But parrots are particularly good at mimicking human speech. Why? Scientists aren't sure. But they have found that parrots can mimic a surprisingly wide range of sounds. They can whistle, laugh or even bark like a dog! And of course, many parrots are taught to mimic words. This doesn't mean that parrots can actually *talk*, however.

Let's say you walk into a room and your pet parrot squawks "Hello!" You might think, "Wow! What a smart bird!" But then 10 minutes later, as you walk out of the room, your parrot might say "Hello!" again.

Question sent in by Jacob Johnson, Walla Walla, WA.



**Do you have a question
that no one seems able to answer?
Why not ask us? Write to:
Any Questions? 3-2-1
Contact, P.O. Box 40, Vernon,
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WHAT'S NEW, PUSSYCAT?

The Latest Findings on Felines

by Deborah Heiligman

PHOTO: JACQUELINE MANN/ANIMALS



One minute she is sitting on your lap—a purring, cuddly ball of fur. The next minute she is slinking around corners, stalking a mouse or a bird. You see her crouch and pounce—in for the kill....

One day he is your best friend, jumping on your lap whenever you sit down, purring contentedly when you pet him. The next day he ignores you....

For years, cat-lovers and cat-haters have been puzzled by the behavior of the mysterious feline. So have scientists. But scientists are now beginning to understand what makes cats act the way they do.

Dr. Benjamin L. Hart, an expert on cats, told CONTACT: "Cats are very close to their wild ancestors." Of all the animals that people keep

as pets, only the cat lived alone in the wild. Because the cat didn't live with other animals or people, it is almost impossible for a human to rule a cat.

"You can yell at a horse or a dog, and it will listen to you," Dr. Hart says. "But you can't do that with a cat. A cat has no fear of people. It will just fight back by biting or scratching."

Although cats are still close to their wild ancestors, they do live well with people. "Cats are very adaptable. They are much more flexible than we used to think," Dr. Hart says.

So a cat can live in a home and be fairly tame one moment. But the next minute, he might jump off your lap when he sees something good to kill. Even well-fed cats love to kill mice, birds, rabbits and other animals.

Because cats are hunters at heart, they like to

pounce on almost anything that moves—even if that something is human. “Cats love to attack your ankles,” Dr. Dale Olm told CONTACT. He is a veterinarian who studies how animals behave. “Ankles are good ‘prey.’ An ankle moves around a lot. It feels good to bite, and a person makes a noise when bitten.”

If you don’t want your cat to use your ankle for target practice, Dr. Olm suggests you offer it an object that you can wiggle: a string, a rope or a catnip toy.



Are You My Mother?

People who don’t like cats complain that cats prefer to stay by themselves. But scientists have discovered that kittens can be trained to be part

of the family. Before you can train a cat, however, you have to understand it.

When dogs were wild, they travelled in packs. They had friends in the pack, and the packs had leaders. So dogs think of people as companions or leaders. Cats in the wild travelled alone. So how do cats view humans?

Hold on to your hats—you’re a mother! At least, many scientists believe that cats think of humans as a stand-in for Mom.

Dr. Dale Olm explains: “We can’t ask a cat why it does certain things the way you can ask a person. All we can do is observe and make educated guesses.”

Olm and other animal behavior specialists watch how cats respond to people and how kittens respond to their mothers. They see many similarities. “When kittens nurse,” Olm told CONTACT, “they knead their mother with their

▶ You can tell what a cat is feeling by reading its body language. Everything about this scared cat says: “Don’t come any closer.”

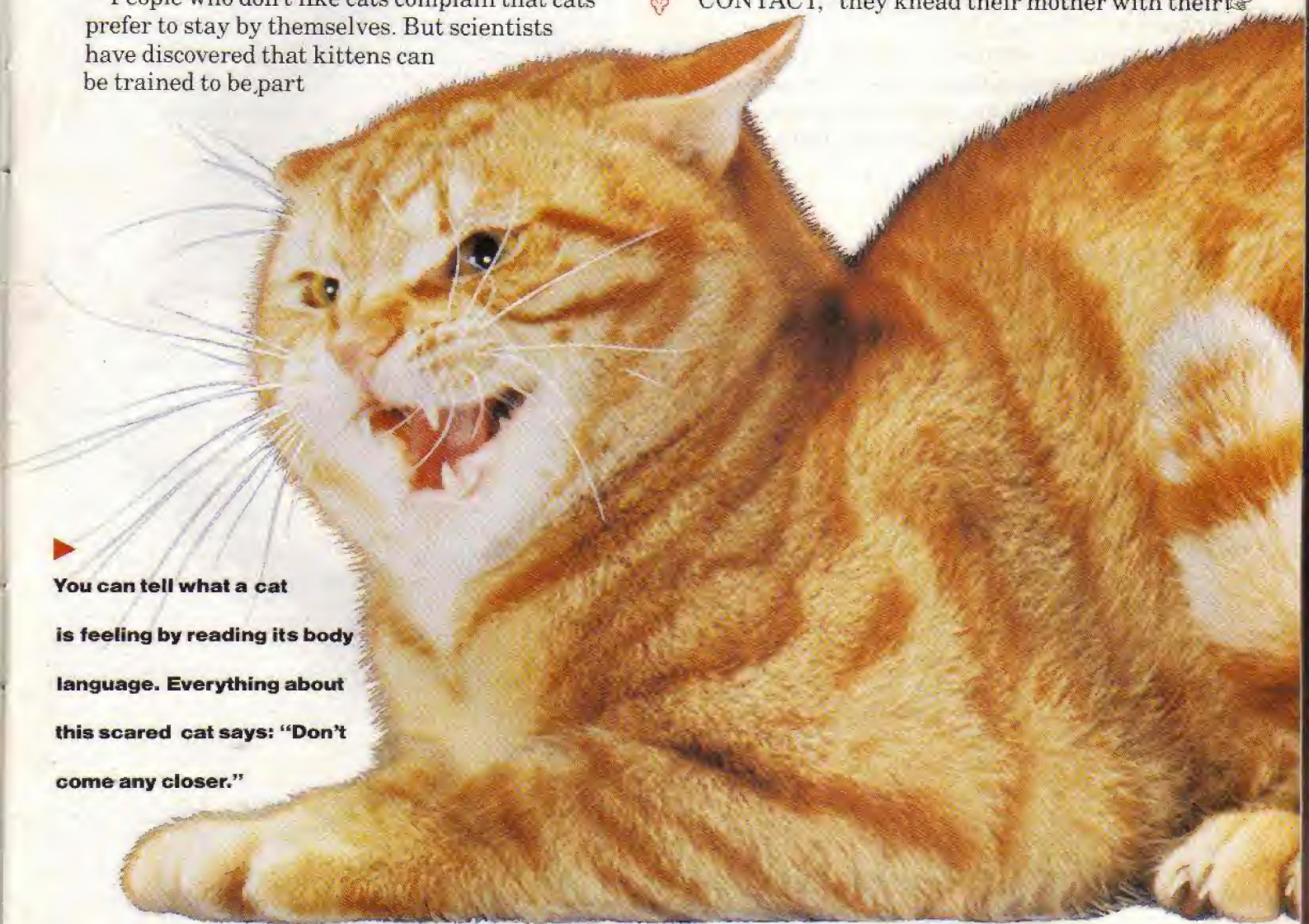


PHOTO © JANE BURTON/BRUCE COLEMAN

front feet. What do adult cats do when they sit on your lap? They knead your lap with their front feet."

There's another clue too. Everyone knows that cats purr, but did you know that grown cats do not purr to each other? Kittens purr when they are around their mother. Grown cats purr when they are around humans.

Also, the fact that cats accept humans at all means they probably think of us as a mother substitute. Cats rarely accept other adult cats, except their mother.

Now that scientists better understand cats, they say most felines can be shaped into warm, friendly critters—if you begin training them when they are kittens. The trick is to hold the kitten a lot, pet it and talk to it from the age of two to seven weeks. So if you're getting a kitten, ask the mother cat's owner to do that, or pick a kitten from a friendly family.

According to researchers, cats are very sensitive to the feelings of their owners. "I wouldn't call it ESP or anything, but cats do seem to be able to look at us and tell how we're feeling," Dr. Olm says.

According to Dr. Benjamin Hart, "Some cats are very sensitive to change. If you go on vacation, move to a new house or add a new baby to the household, a cat can get very upset."



Body Language

Although you can't ask a cat what it is thinking, you can "read" its mood through body language. A scared cat will crouch down, its tail tucked under its legs, its ears flat, for example. A happy cat usually has its tail straight up in the air, or if the cat is sitting down, the tail will move around in little "S" shapes.

"As a veterinarian, it is very important for me to read a cat's mood. Otherwise I could get bitten or clawed," Olm told CONTACT.

We're all familiar with the "Halloween" cat—arched back, big fuzzy tail, ears back. That cat is terrified, but ready to fight. Olm says, "Don't go



PHOTO © SYDNEY THOMPSON/ANIMALS ANIMALS

▶ **Cats are excellent hunters.**

Even well-fed cats like to play

"cat and mouse."

▶ **When a cat falls, it naturally
twists itself around so that it
almost always lands on its feet.**

near a Halloween cat.”

A cat's body language is important for another reason, too. It can help save the cat's life. You've probably heard the saying, "A cat has nine lives." Does it really? Well, a cat may not survive nine falls from a skyscraper, but cats often do survive when they fall out of windows!

In New York City, scientists studied 132 cats that accidentally fell out of buildings from windows that were from two to 32 stories up. Although many were injured, 107 of the cats survived.

How can a cat live through such a fall? Although you should never, ever, drop your cat out of a window, if you do see a cat fall, notice how it twists and turns so it lands on its feet. Some scientists think when a cat falls from a high place, it has time to relax and stretch out its legs, which softens the landing.

Cats may not have nine lives, but its one life can provide enough excitement and fun for any cat-lover. And for scientists, felines provide a lifetime of study as we continue to unravel the mystery of the cool cat! ♦



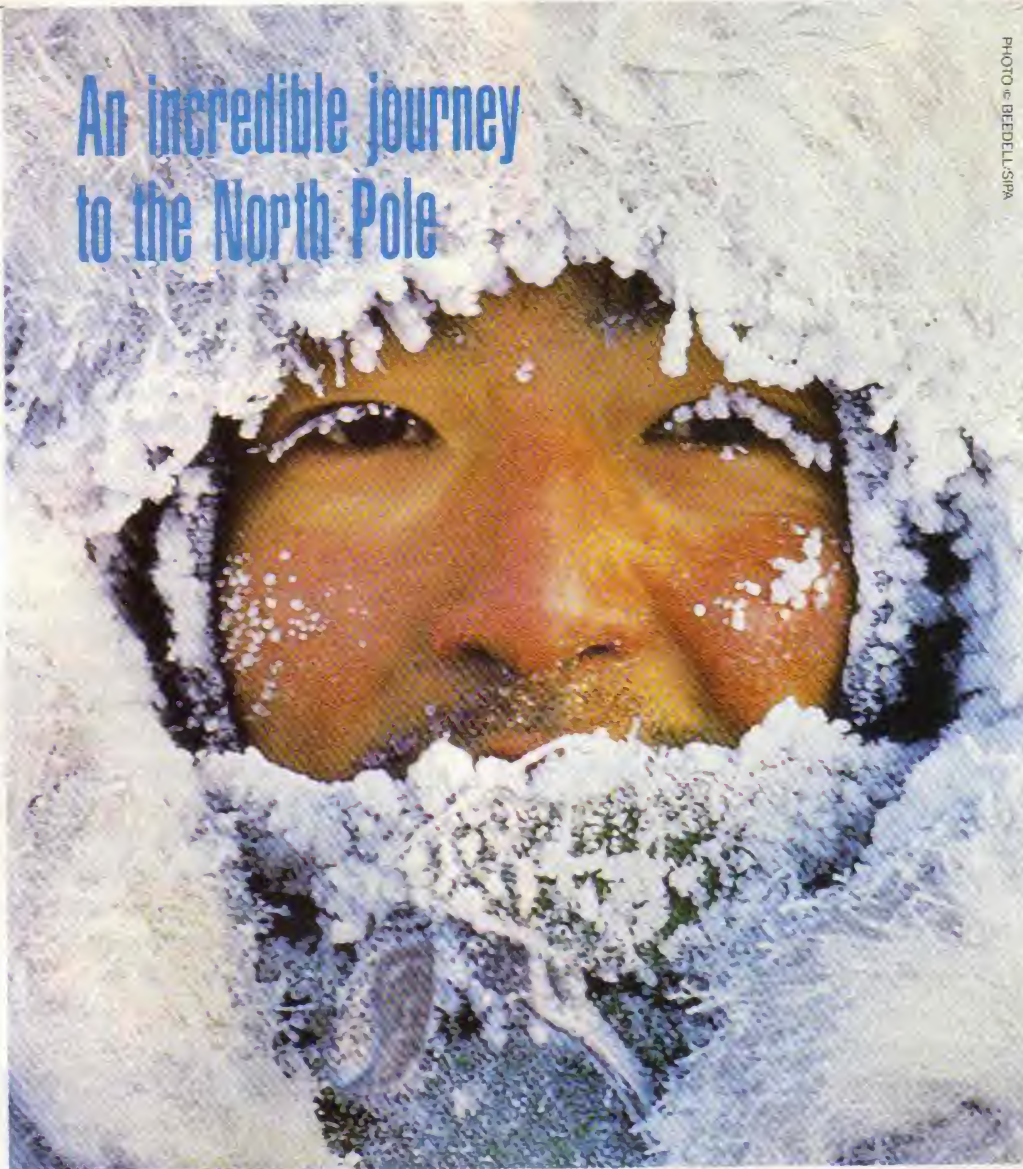
PHOTO © RICH JARD KOOL/ANIMALS ANIMALS

◀ You can't order a cat around, but you can train it to be more friendly by holding, petting and talking to it when it is a very young kitten.

ICEWALK

An incredible journey to the North Pole

PHOTO © BEEDELL/SPA



by
Elizabeth
Keyishian

“I hate the cold,” declares Robert Swan. “No one in his right mind likes ice in his underpants.”

For someone who hates the cold, Robert Swan spends *a lot* of time in cold places. He is a polar explorer. Last March, Swan and seven other explorers from seven different countries set out from northern Canada on a 500-mile walk to the North Pole.

They brought no snowmobiles, dogsleds or fancy equipment. They hauled their own supplies on 250-pound sleds. Their only contact with the outside world was by radio.

On the other end of the radio were students

and scientists at the base camp in Eureka, Canada. All together, 22 students from 15 countries followed the team's progress by radio. They were all part of an adventure, called ICEWALK.

The eight explorers had to cross the Arctic Ocean—on shifting sheets of ice. They battled fierce cold and winds. Why? “To get people to pay attention,” exclaims Robert Swan.

But the 32-year-old Englishman didn't want people to pay attention to *him*. He wanted people to pay attention to the environment.

“If we could work as a team—with all the difficulties and hardships—then maybe our countries could work together to save the environment,” explains Darryl Roberts, one of the explorers. “We wanted to be an example of international cooperation.”

Swan also hoped that Icewalk would call attention to the stark beauty of the Arctic—and how man-made pollution was destroying it.

One Step At A Time

The march to the Pole tested the explorers in many ways. The days were difficult and exhausting: 18 hours of walking over frozen sheets of ice. To make matters worse, Darryl Roberts had frostbite.

Frostbite can happen when the skin is exposed to extreme cold. The skin freezes, damaging the blood vessels and body tissues. The best thing you can do is stay warm—but that was impossible.

"The temperature was minus 75, and I hadn't put enough padding in the bottom of my boots. When I pulled off my sock, my foot was a greenish-gray color."

Darryl had a tough decision. If he turned back, his foot could be saved. But if he kept going, there was the chance that he'd lose it.

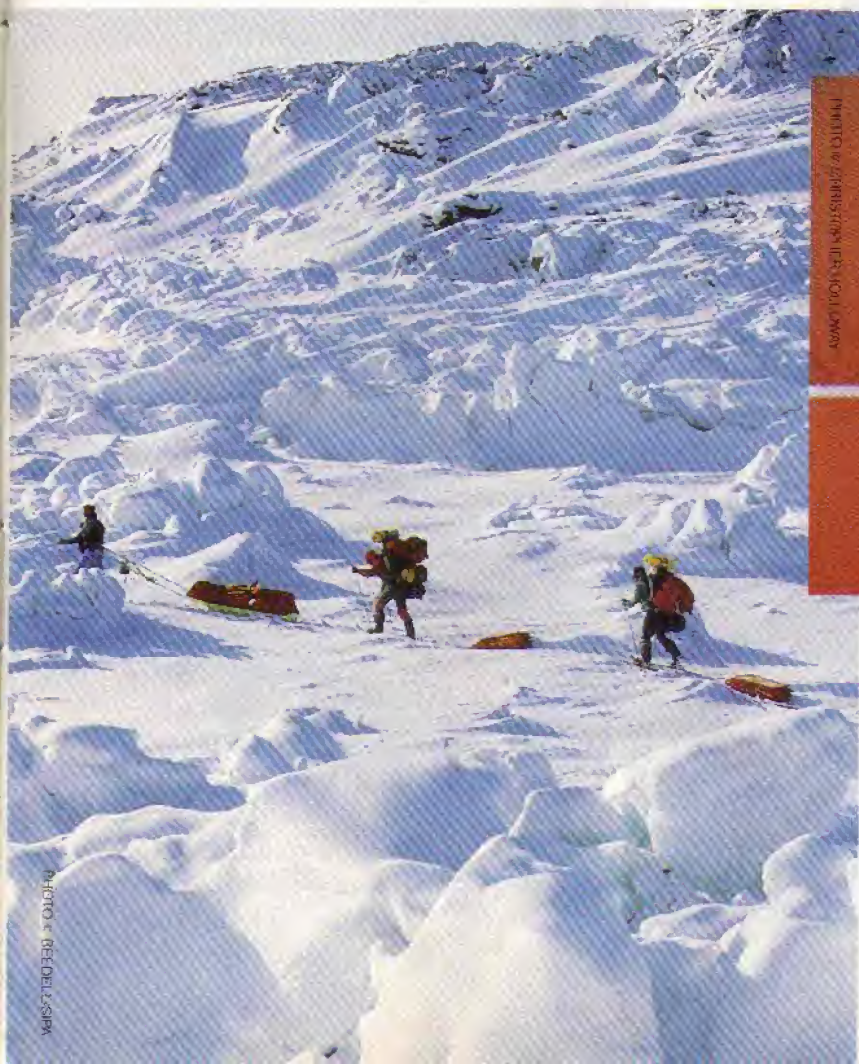
"I got a sense of what he was suffering through," says Michael Rothbart, one of the students who was in radio contact with the explorers.

"At one point it looked like he might lose one of his toes. But he decided it was worth losing a toe to get to the Pole. In the end, his foot ended up healing."

Radio contact with the students was important to the whole team, but especially to Darryl. "Living with seven other men under such extreme conditions, it was so important to talk to someone else about something other than surviving," Roberts told CONTACT. "The students were so excited, telling us about the things they were learning. That gave us strength."

The Team

And the team members needed all the strength they had. Although polar ice can be several feet thick, it can crack open without warning. The cracks can be several miles wide. The team had to go around them or wait until the cracks froze over in order to cross them. ❄️



▲ **Robert Swan raised millions of dollars to make Icewalk happen.**

▲ **The team's two biggest fears are falling into the water and meeting hungry polar bears.**

There were also huge ice ridges. Winds and tides combine to send sheets of ice crashing into each other. This causes ice ridges that are 20-30 feet high. The team had to lug huge sleds over the ridges or walk miles out of the way to get around them.

"I got myself through it by focusing on the people in the team," says Darryl.

"Darryl turned to me because I always made him laugh," Swan told CONTACT. "I was equally exhausted, and I didn't like it anymore than he did. But even if I had to put him on my own sled, I'd get him there."

To make it to the Pole under such difficult conditions, the explorers had to work as a team. Each person had to look after himself. And each person had to contribute to group activities—like putting up tents and cooking meals.

After setting up camp, the team would sit

down to a nice meal of...muktuk.

"Muktuk is whale skin that is high in calories," says Darryl. "You chew off the fat and spit out the skin." They also ate pemmican, a high-calorie combination of dried meats.

Meanwhile, the students back at the base camp had it much easier. They slept in warm dormitories and ate pancakes for breakfast. Besides keeping up with the polar team by radio, the students tested ozone levels and took snow samples to find out how much man-made pollution there was at the Pole.

"One day, we were driven out across the sea ice and let off near an iceberg," student Michael Rothbart told CONTACT. "And

then we skied back. Every half mile, we stopped to take snow samples.

"We had to take off our gloves to collect the snow. When we did a test to find out how much

**"Darryl turned to me
because I always made
him laugh.
I was equally exhausted,
and I didn't like it
anymore than he did.
But even if I had to
put him on my own sled,
I'd get him there."**

Students from 15 countries
share global togetherness.



PHOTO © CHRISTOPHER HOLLOWAY



One of the biggest challenges for all the team members is crossing over the cracks in the ice.

Students, based in northern Canada, send up an ozone balloon to test conditions of the ozone layer—the Earth's solar shield.

pollution was in the snow, we found out our samples were no longer pure because we had touched them. It taught us how difficult it is to do what Swan's team is doing."

Home Free

What did it feel like to finally reach the Pole? "I stood there looking at the faces of our team," says Darryl. "I remembered back to when we started, when all our faces were fat and chubby.

"Our faces were still fat—but that's because they were swollen from freezing. Our bodies were thin, with frost-bitten skin. But we were all there. We had made it as a team."

"To come back home after weeks of marching and to sit in a chair is heaven," Swan told CONTACT.

"To be able to buy chocolate after you've nearly starved to death is wonderful.

"I saw how lucky I was to see the North Pole. You can't force people to care about the environment," he adds. "But it's very important that people at least realize how beautiful—and how fragile—this planet is." ♦



The team celebrates making it to the Pole.

ABOUT FA

CONTACT TAKES A LOOK AT E

PHOTO © RICHARD HUTCHINGS/PHOTO RESEARCHERS, INC.

by Eric Weiner

Look in a mirror. Smile. Now frown as if you were about to cry. Look angry. Disgusted. Interested in something. Now pretend you're showing someone how much you hate them. Look surprised. Guilty. Ashamed. Afraid.

You just went through a human being's 10 basic emotions. And according to face scientists, the faces you made would

be understood anywhere in the world.

To prove this, scientists have taken photos of actors making different expressions such as fear, hate and joy. They showed the photos to people in remote places, from tribes in Africa to Indians in South America. Everyone responded to the photos the same way. People who smiled were

CE!

thought to be happy, frowners were sad.

Scientists now believe that people are born knowing how to make certain faces. These faces help us communicate. For instance, the furious face tells other people, "Watch Out!"

There are 80 muscles under the skin of a human face. Humans can use these muscles to make over 7,000 different expressions! Most of these expressions are blends of the basic 10 emotions. Still, reading faces takes practice.

PHOTO © AL CLAYTON/INTL. STOCK PHOTO



versity of California in San Francisco. He is an expert on faked expressions. Sincere expressions, he has found, tend to be symmetrical. That is, the left side of the expression matches the right side. Faked expressions are not the same on both sides of the face.

Ekman has also found that in a true smile, there's a twinkling in the eyes and a crinkling of the skin around the eyes. You can try this in the mirror. Smile with just your mouth and keep your eyes blank. How genuine do you look? Now smile with your eyes as well.

If you keep on smiling, you may put yourself in a fine mood. According to Ekman, ☞

PHOTO © RICHARD HITCHINGS/PHOTO RESEARCHERS, INC.



Professor Carroll Izard of the University of Delaware is one of the world's leading experts on the human face. "Anyone can get better at reading faces," Professor Izard told CONTACT. But first you have to become familiar with the various face movements and what emotions they signal.

"Of course," adds Izard, "if people are trying to *hide* their feelings, then all the rules of expressions change!"

Faking It

Professor Paul Ekman is a face psychologist at the Uni-

PHOTO © SUZANNE SZABO/PHOTO RESEARCHERS, INC.



PHOTO © GEORGE S. ZIMMELMANN/EVERETT PRESS



the expressions we make can affect our feelings!

Try this expression: Squint your eyes. Lower your eyebrows and draw them together. Make a rectangular opening with your lips so that your teeth show.

Now look in the mirror. If you're doing the expression correctly, you will look very angry. And if you keep it up, your heart may start to beat faster. It seems your body is preparing for a fight!

Don't keep making an angry face or a frown for too long, though. Says Izard, "If someone frowns all the time they will eventually get wrinkles and little bulges in their face. Then even when they *try* to look very

“If someone frowns all the time, they will eventually get wrinkles and little bulges in their face.”

pleasant they can't completely undo the frown.”

Professor Robert Zajonc at the University of Michigan has found that something similar happens to couples who are married for a long time. For years they imitate each other's expressions. Eventually they begin to look alike!

Baby Face

Everyone in the room is staring at the baby's face. One sci-

entist uses a videocamera to film the baby's expressions. Two others make notes every time the baby smiles or frowns.

What's going on? We're in Professor Izard's face lab. By studying babies' faces, Izard is hoping to learn more about what babies think and feel.

"This is where we first see emotions develop," Izard told CONTACT. "And the great thing about studying babies is they don't hide their feelings!"

Nevertheless, it's often hard for parents to tell what their infants are going through. A two-month-old baby can't tell its parents, "I'm angry!" Izard hopes his research will help parents to better understand their babies. Babies are *trying* to show us what they're feeling, says Izard. But parents sometimes misread their children's expressions.

After each videotaping session, a team of three researchers spends hours studying the film of the baby's face. They play back the baby's smiles and



PHOTO © J.P. CASALBON/PHOTO RESEARCHERS, INC.



PHOTO © DAVID FOLLAARD/STOCK MARKET



PHOTO © DARIO PERLA/INT'L STOCK PHOTO



frowns in super-slow motion. Each researcher watches only one third of the baby's face at a time. The researchers write down how the baby's face moves at every 1/10 of a second!

This may sound like an awful lot of attention to pay to a baby's giggle, grin or frown. But Izard has found that a baby's expressions are hard to tell apart. For instance, one slight change in the eye region can turn a baby's expression from anger to pain.



Funny Face

Faces are fascinating—and not just to scientists. This fall, over 30,000 people went to the Louisville, Kentucky, science museum to see its show "About Faces." There were 13 different face games to play.

People got to make funny faces and have their expressions played on a huge screen for everyone to see. And they could watch their own expressions in slow motion. Or they could use a computer to mix and match their own features. So people could see their face with Jane Fonda's blue eyes and Ronald Reagan's hair.

"It's amazing how much one feature—a pointier chin, say—



will change your face," says Elizabeth Wideman, who worked on the exhibit.

At another booth, people sat across from each other and looked through a sheet of frosted glass. Thanks to a lighting trick, the two people could see what their faces would look like if they were combined.

"I did this with my boyfriend," says Elizabeth. "I have red hair and he has a beard. He was very surprised to see himself with my red hair and I sure looked funny in his beard!"

A mirrored panel let people see themselves as they look to others. "When you look in the mirror you see the *reverse* of what people see when they look at you," Elizabeth explains. "It was so strange to see the part in my hair on the other side of my head!"

If your bathroom mirror is hinged in the middle, you can get this same effect. Open one door towards you until it is reflecting the closed door. Your reflection in the closed door will be a standard mirror image—reversed. But the reflection of your reflection, in the open door, will be *doubly* reversed...or normal.

Now check to see if your mouth is forming a straight, horizontal line. If it is, do the following: Raise the corners of your mouth upwards. Crinkle your eyes. Make them twinkle. That's right, smile! ♦

THAT'S ALL, FOLKS!

In 1977, *Voyager 2*, an unmanned spacecraft, set out on a journey to the edge of our solar system. Last August — 12 years after it was launched — *Voyager 2* completed its mission, as it sped past Neptune, the eighth planet from the sun.

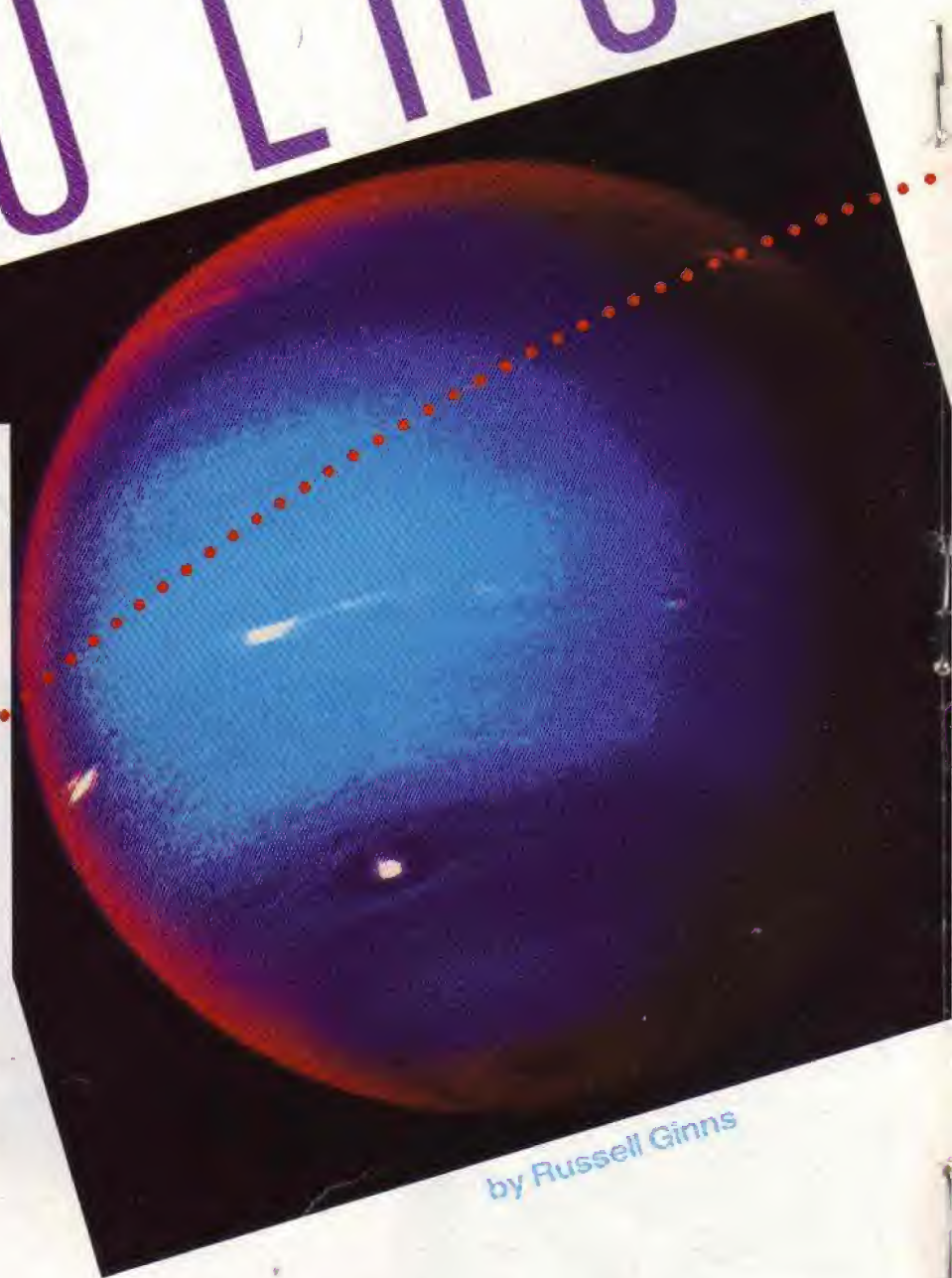
Neptune is 2,800,000,000 miles from our planet, so pictures from *Voyager 2* took more than four hours to reach Earth. When the signals finally reached home, scientists were amazed by what *Voyager 2* found. Here are some of the latest discoveries:

- Neptune, the third largest planet, is 17 times as big as Earth. It's a giant slushball made of

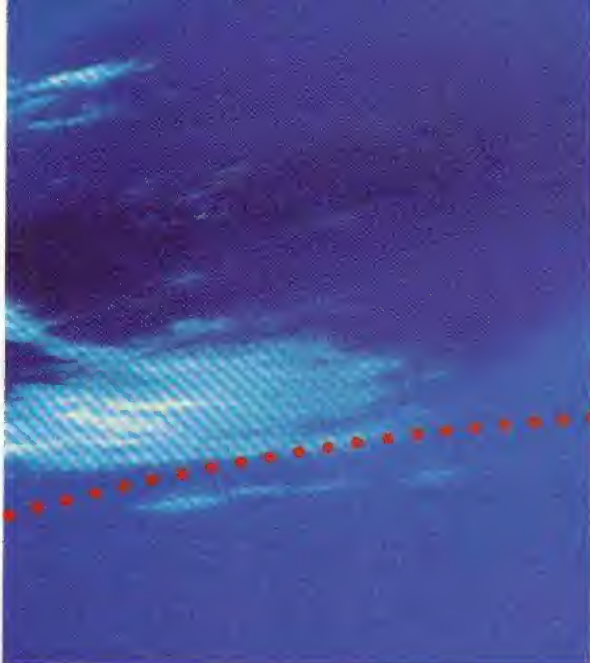
rock and melted ice, mixed with hydrogen and helium.

- Scientists thought that Neptune had three moons, and were not sure if there were any rings around the planet. It turns out that there are eight moons and five rings.

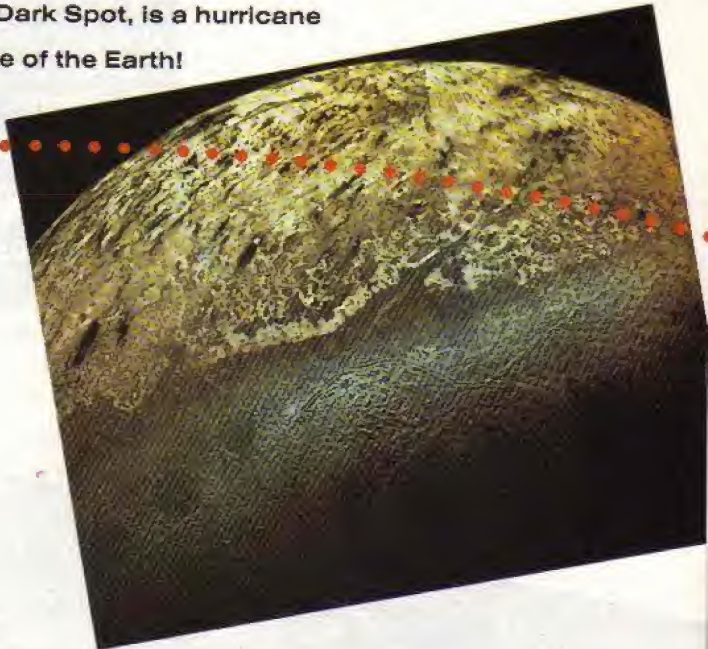
- Triton, Neptune's largest moon, has its own atmosphere — it's covered with a layer of



by Russell Ginns



◀ Neptune is a violent, stormy world. Winds whip across the planet at up to 400 miles per hour. This storm system, called the Great Dark Spot, is a hurricane the size of the Earth!



nitrogen and other gases. It also has oceans of ice, and even some volcanoes. Scientists think that Triton might have been a planet that orbited the sun, but was pulled in by Neptune's gravity millions of years ago.

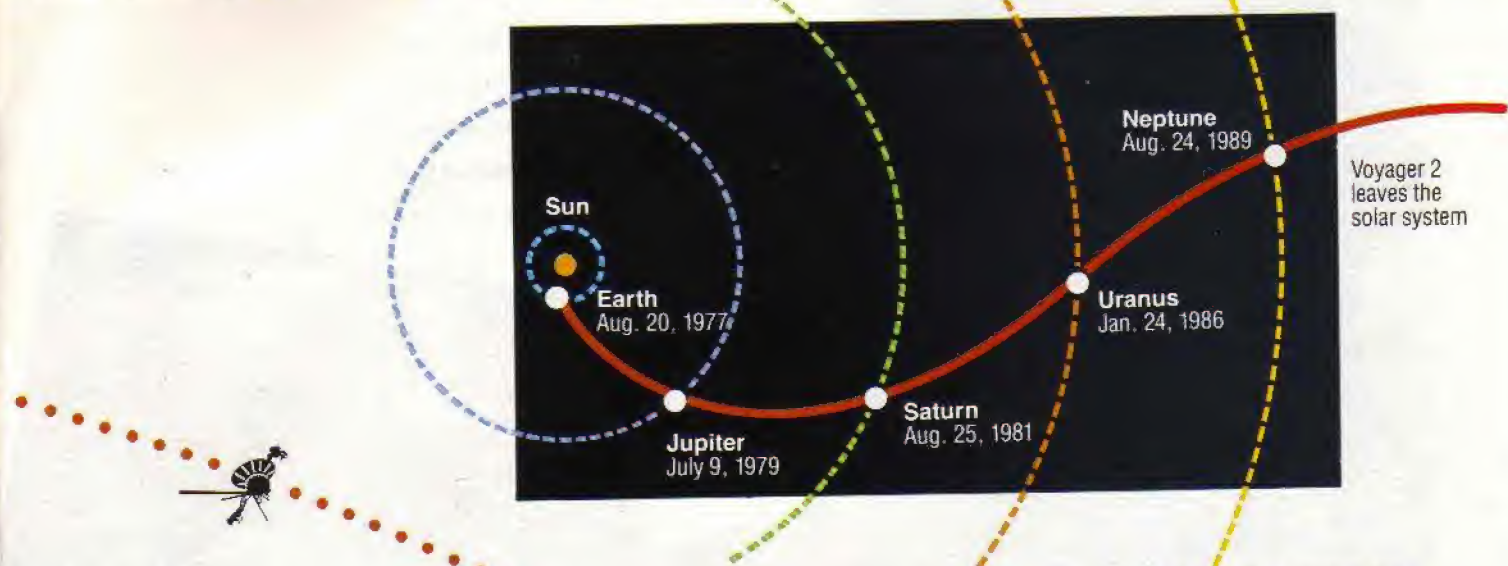
Voyager 2 is now zooming away from our solar system at more than 30,000 miles per hour. By the end of this year, it will shut off its camera to save energy so it can continue its trip. But it will still be sending back information about outer space for another 25 years. After that, *Voyager 2* will finally run out of power and drift silently through space for millions of years. 🗑️

▲ Triton has a temperature of about 400 degrees below zero. It may be the coldest spot in the solar system!

▼ These two rings of Neptune are 6,000 miles apart. That's more than twice the distance from New York to Los Angeles.

PHOTOS COURTESY OF JPL/NASA





Voyager 2
leaves the
solar system

▲ It took 12 years for
Voyager 2 to complete
its mission. It passed
the planets Jupiter,
Saturn and Uranus
along the way.

▲ So long, folks!
Voyager 2 sent this
photo of Neptune and
Triton before leaving
our solar system
forever.



PHOTOS COURTESY OF JPL/NASA

MAIL

ATTENTION HACKERS!

Dear CONTACT,

I'd really like to use Basic Training programs on my computer. But I have an Atari computer. How can I use your programs?

Aaron Henry
Toledo, OH

We write our Basic Training programs for IBM and Apple II (and occasionally C64) computers because those are the computers that the greatest number of our readers own. We're sorry that we can't print other versions. But if you check with your teachers, or if you have friends that know a lot about programming, you should be able to adapt our programs for the computer you own.

We hope you can. We'd like as many readers as possible to join in the fun!

SPACE SAVER

Dear CONTACT,

In question number two on the "Help Save Our Space Station" puzzle (Sept. 1989), the answer you gave was eight. But that doesn't cover the hole.

My-Anh Nguyen
E. Lansing, MI

We must have been spaced out to think that eight would fix the hole in the airlock. Seven is the correct answer.

Thanks for all the letters from our down-to-Earth readers!

CONTEST ROUNDUP

BACK TO SCHOOL

Heather and Jason Metzger of Albuquerque, NM, a brother and sister team, were the first place winners of our September 1989 *BACK TO SCHOOL* Contest. Using the letters in *BACK TO SCHOOL*, they were able to make 452 words! Our second place winners were:

Patrick Wang of Houston, TX (425 words)
Lena Lang of VA (405 words)
Brian Cake of Carmel, IN (402 words)
Lori W. of Kirk, CO (376 words)
Sean Duffy of Philadelphia, PA (373 words)
Michelle Moyer of Blossburg, PA (360 words)
Betty Moran of Owensboro, KY (340 words)
Susan Stone of Terre Haute, IN (330 words)

CIRCUS CONTEST

Here are 10 kids who gave us a chuckle with their entries in our *CIRCUS* Contest (Sept. 1989):

Mike O'Connor of Chicago, IL	Anne Amos of Chatham, VA
Sarah Loehr of Alexandria, PA	Nicole Amodeo of ME
Tyrone Aiken of Reidsville, NC	Russell Smith, IV of Virginia Beach, VA
Ricky K. Soong of Falls Church, VA	Shahla Maghzi of San Francisco, CA
Robin Chance of Cheney, KS	Jonathan Gottfried of Rockville, MD
Zach Perez of Sonora, TX	

Thanks to everyone for entering!

We Want Mail!

Dear Readers:

We love hearing from you. Your questions and ideas help us make *CONTACT* a better magazine. So why not drop us a line? We can't answer every letter, but we do read them all. Send your mail to:

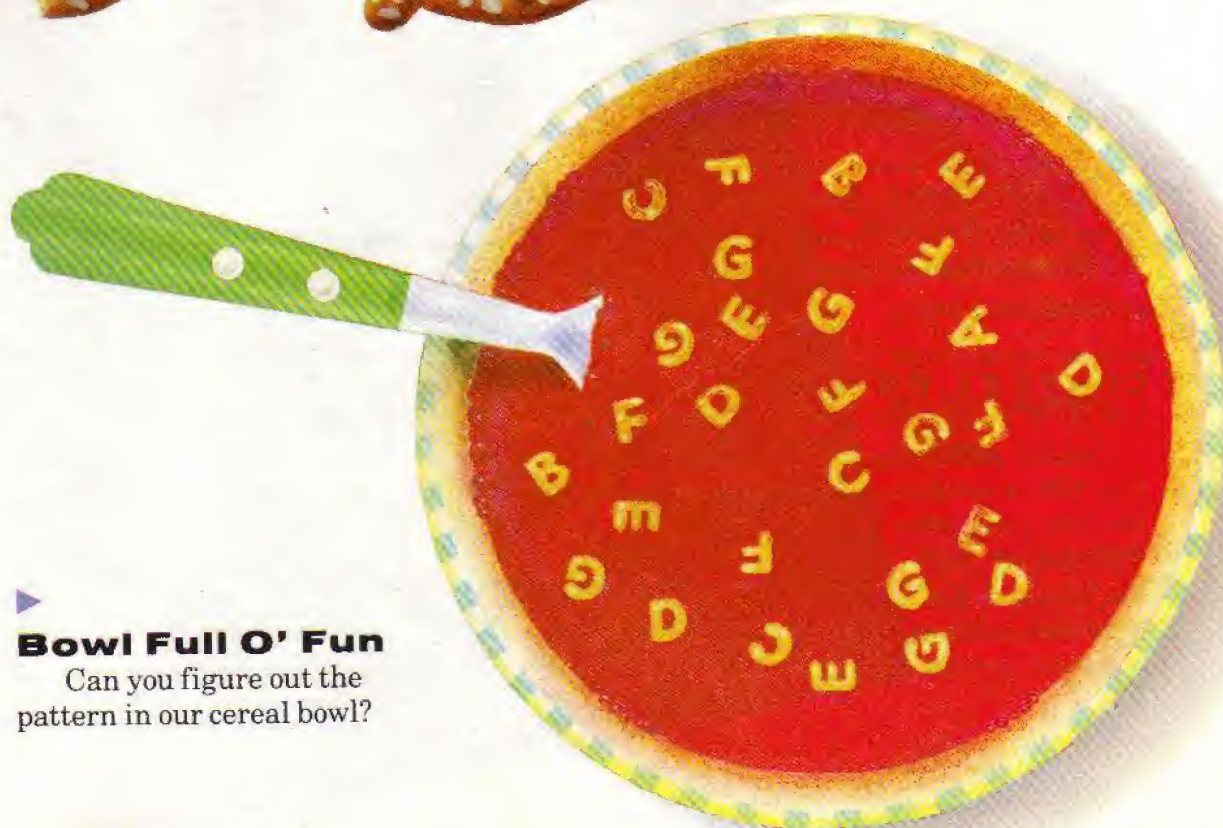
3-2-1 *CONTACT*: Letters
P.O. Box 40
Vernon, NJ 07462



P U

Perplexing Pretzel Puzzle ▼

Someone has nibbled on all of these pretzels. But if you look carefully, one of them wasn't shaped like a normal pretzel to begin with. Can you find the mutant munchy? Here's a picture of a whole pretzel to help you out.



► Bowl Full O' Fun

Can you figure out the pattern in our cereal bowl?

Z Z L E S



Magic Cookie Square ▲

Place one of these cookies in the center square. If you pick the right cookie, there will be a pattern in every column and a pattern in every row.



Answers on the Did It! page.

TOASTBUSTERS

A SQUARE ONE PUZZLE

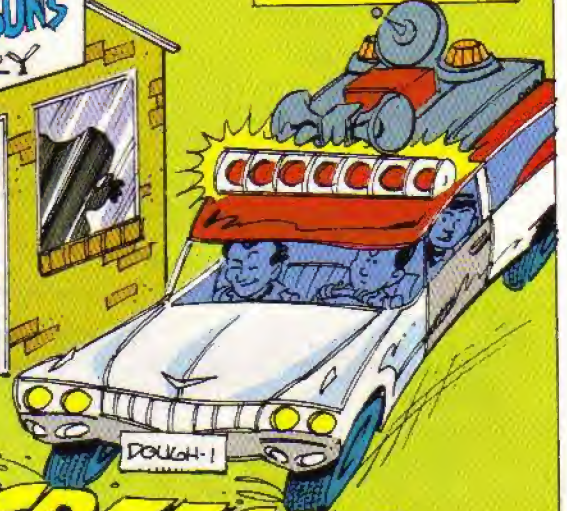
STORY:
RUSSELL GINNS
ART:
KEITH WILSON

A FOUR-LOAF
ALARM WENT OFF
AT MIDNIGHT. WE
HOPPED INTO THE
BREADMOBILE
AND SPED TO THE
SCENE OF THE
CRIME...



THANK
GOODNESS
YOU'RE
HERE!

**RISINGBUNS
BAKERY**

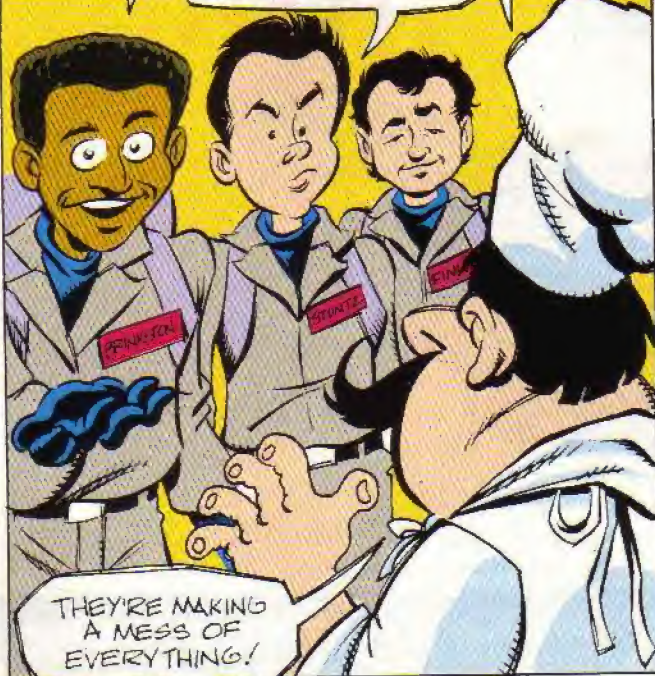


SCREECH!

WHAT'S ALL
THE HUBBUB,
BUB?

GIANT SLICES OF
BREAD HAVE INVADED
MY STORE!

GEE, THAT'S CRUMMY.



THEY'RE MAKING
A MESS OF
EVERYTHING!

I WAS COUNTING
TUBS OF CREAM
CHEESE WHEN...

**RISINGBUNS
BAKERY**

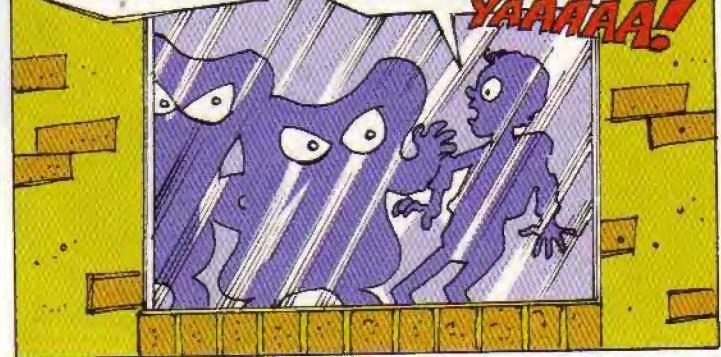


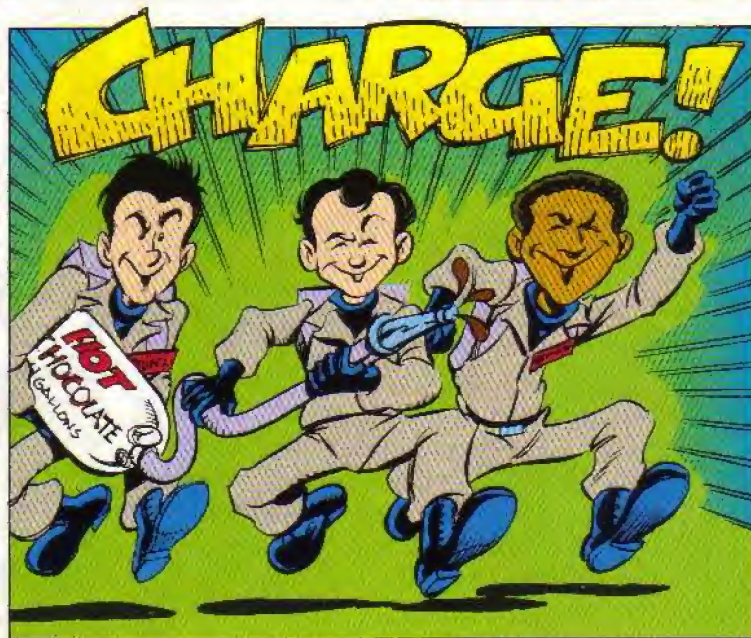
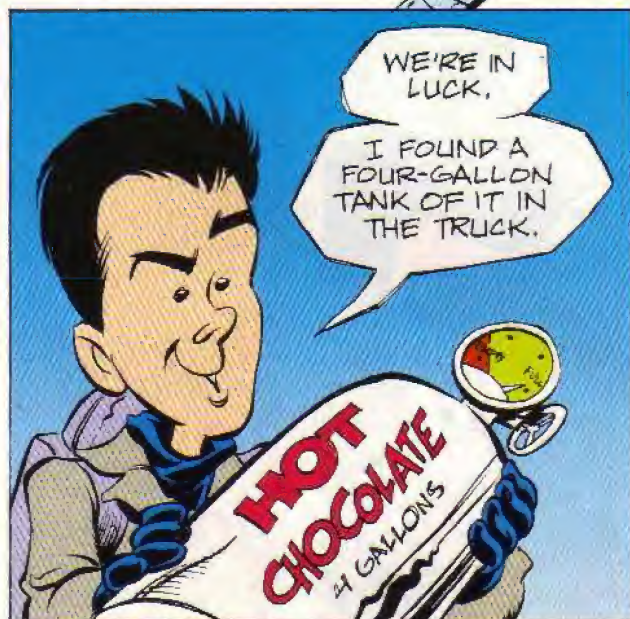
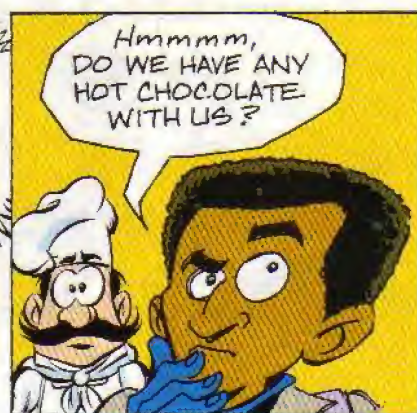
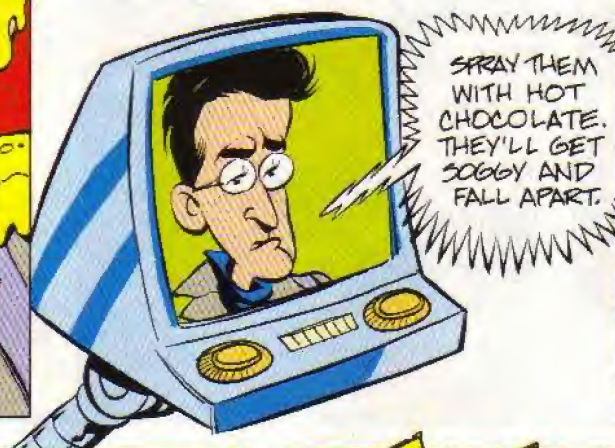
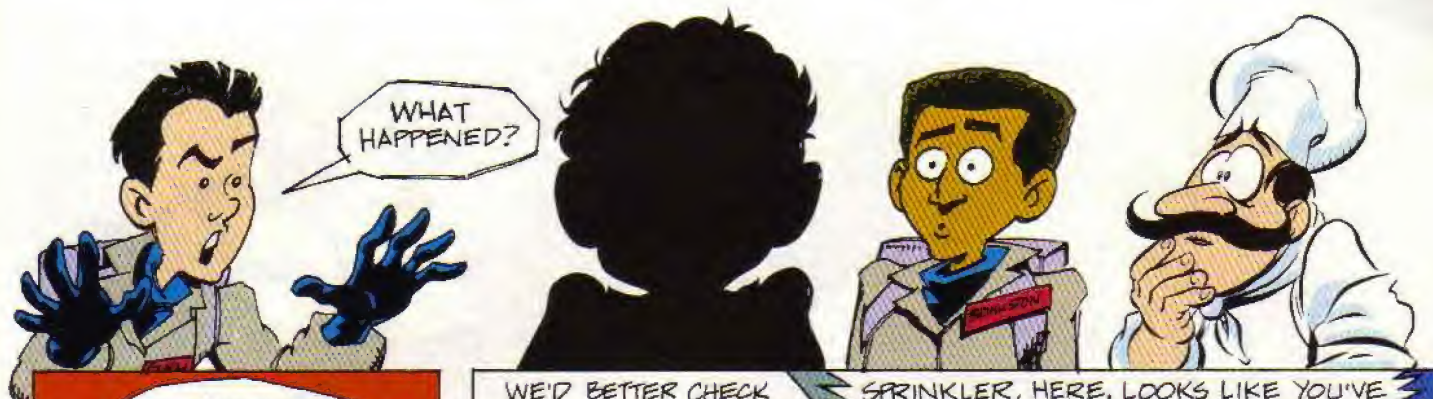
NEVER FEAR,
THE TOASTBUSTERS
ARE HERE!

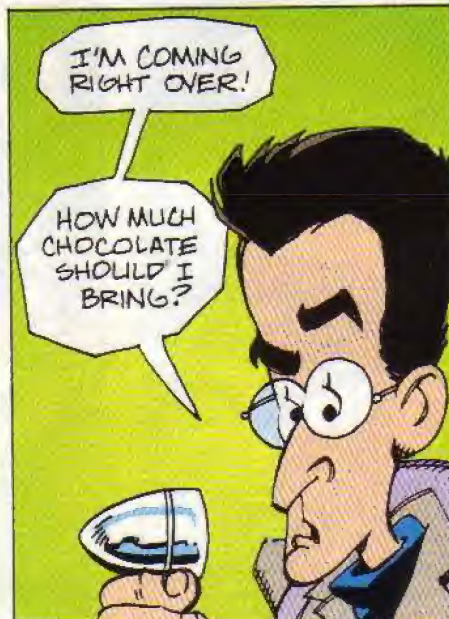
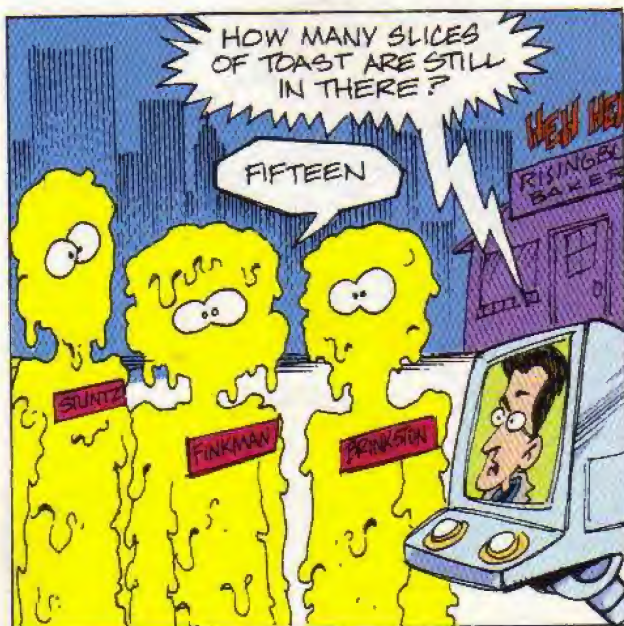
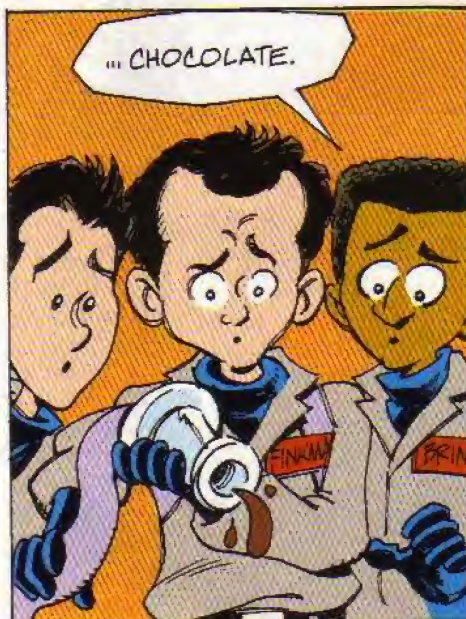
ALL RIGHT
YOU TOASTS...

COME OUT WITH
YOUR CRUSTS UP..

YAAAAA!







HOW MANY GALLONS OF HOT CHOCOLATE WILL THEY NEED TO GET RID OF THE MONSTERS AND SAVE THE WORLD?

(HINT-- THEY USED FOUR GALLONS TO STOP THE FIRST TWO... SLICES OF TOAST.)

ANSWER ON THE DID IT! PAGE.

DEAR TABBY

A SQUARE ONE PUZZLE



Yes, math fans, it's time to make fun of gossip pages with "Dear Tabby," your favorite feline gossip. Each letter is a puzzle. To help you solve each puzzle, read Tabby's answers. They each contain a hint.

DEAR TABBY,

I'm a professional dog-walker. My business is called "Dog Business." I figured that was a good name, considering that's what dog's do.

Anyway, here's my problem. Bingo will only walk on the beach. Sophie will only walk in the park. Petey and Zoro will go anywhere, but never with Sophie. I can walk *up to* two dogs at a time. How many walks do I have to take each week so every dog gets walked twice?

**Signed, Knee-deep
in Dog Business**

Dear Knee-Deep, Ugh.
What an awful job. It seems to me that the only way to figure out how to walk those rotten

dogs is to make a chart pairing two dogs together, except for Sophie, who has to be walked alone. Here, I started one for you:

WALK 1	Sophie
WALK 2	Bingo,—
WALK 3	—,—



DEAR TABBY,

I was at a masquerade ball the other night, and I was having a wonderful time. Suddenly, my date ran away. All she left behind was a size 10 shoe.

Well, my neighbor Grizelda has size seven feet. And her best friend, Edweena, has feet that are three sizes smaller. Edweena has a twin sister—Bertha. They are identical in every way, except that Bertha's feet are twice as big.

Is it possible that one of these girls was my mystery date?

Signed, P. Charming

Dear P. Charming,

There's no business like "shoe" business. But seriously, you're only a few "feet" away from your mystery date. Ha, ha, ha.

No, really, the best way to find out if any of these gals is your "one-and-only" is to write down all their shoe sizes as you read your own letter.



DEAR TABBY,

A travelling magician turned my pet rock into a ½-pound rabbit! So I took him to the doctor, who says he can change him into a 14-pound gerbil, a 52-pound chimpanzee or a 367-pound water buffalo. I want the biggest pet possible, but my mom won't let me keep anything bigger than 200 ½-pound rabbits.

Which animal should I pick?

Signed, Anne Imalkeeper

Dear A.I., I think you should trade them all in for a large family of tabby cats. In fact, I have an uncle who lives in a barn in Catanooga...well, more on that later. If you want a big pet, but one that won't break the living room couch, you'll have to do a little *dividing* to find it.



THE BLOODHOUND GANG

THE CASE OF THE STAGESTRUCK ELEPHANT

by Michael Dayton

The Bloodhound Gang was sitting in the bleachers of the Bingham Brothers Circus. Earlier that day, an envelope had arrived at the Bloodhound Detective Agency. Inside were three passes to the show. On the back of one ticket was this note:

SOMEONE IS TRYING TO RUIN ME. I'LL LOSE EVERYTHING IF YOU DON'T HELP.

"I wonder what sort of mystery could take place here at the circus?" Vikki said.

"They probably want to know where all the audience has gone to," Skip replied.

The bleachers were only half-filled. But the performers put on an energetic show.

First came Mylar the Magnificent, the star of the flying trapeze. He did death-defying somersault after somersault.

Next came the lion tamer, Rory Harris. With an ordinary kitchen chair, he held off three fierce lions.

When Harris finished, a small car rolled into the center ring. Thirteen clowns climbed out. They juggled milk bottles, swallowed swords and threw pies at one another.

As the clowns left, Wolfe Bingham stood under a spotlight. "Ladies and gentlemen, it's time for the star of our circus," he announced. "Tiny Tina and her half-ton of elephant fun!"



on
ly. From
ale voice.
ly run!"

The Gang raced to the back room where all was peaceful. There was one elephant, and a small one at that. The elephant appeared frightened. A short woman, who could only be Tiny Tina, was attempting to soothe it.

The owner, Wolfe Bingham, was arguing with the lion tamer and a bald-headed clown.

"I told you that elephant was dangerous," said Harry Shortz, the clown.



ILLUSTRATIONS BY BRAD FARMANN

"That's right," agreed Rory, the lion tamer. "It's time you got rid of Tina and that beast."

"What?" exclaimed Wolfe. "This show would collapse without Tina and her elephant."

"There won't be any circus after that elephant tramples all of us!" Rory replied.

Rory and Harry turned to leave. But the lion tamer issued one final warning. "If you

don't do something about Tina and that elephant, we're going to quit and join Culley's Circus."

As the clown was leaving, he dropped a handkerchief. Ricardo picked it up. He was about to return it when he noticed some strange hairs on it. He quickly tucked it into his pocket.

"You must be the Bloodhound Gang," Wolfe said. "Thank goodness you've come. Someone's trying to ruin me. If I only knew who—or why."

"Tell us the whole story," Ricardo said.

Everything had been running smoothly, Wolfe told them. Then, problems began to trouble the circus, especially Tina and her elephant, Lily. The show would be going fine—until Tina's act. Then something always went wrong.

For instance, one night someone had slipped alcohol into Lily's watering trough. Lily drank the whole trough. That night she was simply too drunk to perform.

"Night after night, our best act is ruined. People come to see Lily. When she can't perform, people demand their money back," Wolfe explained.

"Do you know what happened tonight?" Ricardo asked.

"I haven't talked to Tina yet," Wolfe said. "Come along, I'll introduce you."

They walked across the room. Tina had calmed Lily.

"I don't know what is wrong," Tina said. "Lily was fine until show time."

"Was anyone else around her?" Skip asked.

"I don't know for certain," Tina answered.

"It was at the moment when the lights were dimmed. She's the smartest elephant I've ever trained. I only need to show her a trick once or twice. Then she remembers it. But now she has stage fright or something."

"How did you get Lily?" Ricardo asked. Tina explained that Lily had been a wild elephant in Africa. As a calf, she had strayed from the herd. She was attacked by lions and injured. Doctors had treated her, then sold her to the circus.

"I hate to say this, but if this sort of incident continues..." Wolfe's voice drifted off.

"I'll never get rid of her!" protested Tina.

"There's not much else we can do tonight," Vikki said. "We'll come back tomorrow. In the meantime, I think a little research might help

us get to the bottom of this."

"Are we going to the library?" Skip asked.

"No, we're going to the one place where you'll be most at home—the zoo!" laughed Vikki. "Maybe Jean Jessup can help us with this case."

All About Elephants



The next morning, the Gang headed straight for the zoo. There they located Jean Jessup. Jean was the zoo curator. She made sure that the animals stayed healthy and got proper care.



"Hi! What brings you here?" Jean asked.

"A big case," said Skip. Skip filled Jean in.

"So, what can you tell us about elephants?"

"Let's see," Jean said. "Elephants have been used as work animals for centuries. They're usually friendly and gentle—and fairly intelligent. They don't see well, and they're color blind. But they make up for that with a terrific sense of smell and hearing. They can smell their enemies up to a mile away."

"Elephants rarely forget a trick—or an unpleasant experience. In fact, from what you've told me about Lily, I'd bet that a bad experience is at the bottom of this."

"Well, that's just great," Vikki said sadly. "All we have to do is get Lily to talk about it. We're no further along than we were before."

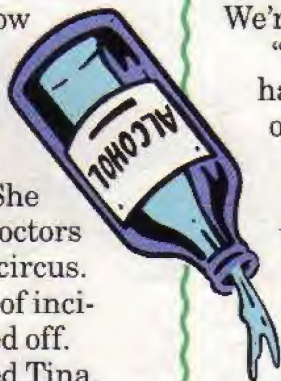
"Wrong," Ricardo said. He pulled the handkerchief out of his pocket. "This may be our answer. That clown Harry dropped it. I noticed something odd. The clown was bald but the handkerchief was covered with thick, coarse hair." Ricardo handed the handkerchief to Jean.

She examined it closely. "No question about these. They're lion hairs."

"That's it!" exclaimed Skip. "Ricardo, you're a genius!"

"Hey, don't I know it," said Ricardo.

"It's time to hit the big top," Vikki said.



THE BLOODHOUND GANG

When they returned to the circus, an argument was taking place. Harry and Rory were yelling at Wolfe. Tina stood nearby, just out of earshot.

"I'm telling you, that elephant tried to kill me," the clown said. "I was wearing this red shirt when I walked by her. As soon as she saw the color, she went wild."

The lion tamer joined in. "When I walked by with meat for my lions, Lily grabbed a whole steak from me. I tell you, once those beasts start eating meat, they turn vicious."

Wolfe looked as nervous as a mink in a coat factory. "I guess you're right. Lily is just too dangerous. We'll have to get rid of her."

"Wolfe, there's nothing wrong with Lily," Vikki said.

"That's right," Skip added. "This clown here has been fooling you. And the lion tamer has been just plain lying."

"You don't know what you're talking about," the clown scowled.

"No, you've got that wrong. You don't know what you're talking about," Ricardo said. "Lily never attacked you because of your red shirt. She couldn't have. Elephants are color blind. And elephants don't eat meat. So Lily wouldn't have grabbed your steak and eaten it."

"That means that the two of you just made up those stories," Vikki said.

"Well, I didn't make up the story about Lily going crazy last night, did I?" Harry said.

"No, you didn't," admitted Ricardo. He reached into his pocket and pulled out the handkerchief. "By the way, you dropped this last night." He handed the handkerchief to Wolfe.

The Gang Saves the Day

Wolfe, you'll notice that handkerchief is covered with hair—lion hair, not Harry's," Ricardo said. "Harry and

Rory figured out that Lily could not stand the smell of lions. As you remember, Lily

was attacked by them when she was a calf. So Rory rubbed the handkerchief across one of the lions. Then he gave it to the clown. Just before Lily's act, the clown waved the handkerchief under Lily's nose. That frightened her."

"So it was you two all along," Wolfe said angrily. "But why?"

"I heard them mention Culley's Circus last night," interrupted Vikki. "I'm sure that has something to do with it."

"That's right, smart aleck," yelled Rory. He turned to Wolfe. "Culley wants Lily and



ILLUSTRATIONS BY BRIAD HAMANN

Tina to work for him. He offered us good money to get you to fire her. Good money. Not like the peanuts you pay us here."

"You don't have to worry about your pay anymore," Wolfe said. "You're both fired!"

"As for you, Lily, you've got a permanent job at the circus. At least I know you'll never complain about being paid peanuts."

Lily must have known a bad pun when she heard one. She filled her trunk with water and hosed Wolfe down. ♦

THE BLOODHOUND GANG

Whenever there's trouble,
We're here on the double...

& STOP & FLOW

Some cities in the U.S. suffer from stop-and-go traffic. But for one town in Hawaii, stop and go has turned to stop and flow!

The town is located near Kilauea (kill-uh-WAY-uh)—a volcano that shoots fiery hot magma from deep beneath the Earth (*Photo, above*). When the

magma cools down from its 1,500 degree F.

temperature, it becomes rock-hard lava.

Now much of the town—and its homes—are buried under 10 feet of lava (*Photo, left*). Luckily, lava moves

so slowly that people can get out of its way. But

houses can't. So the only thing left at a once

busy intersection is a stop sign.



PHOTO © RON DAHLQUIST

REVIEWS



B O O K S

It's New! It's Improved! It's Terrible!

by *Stephen Manes*

A Bantam-Skylark Book, \$2.75

What Arnold Schlempp truly wants for his birthday is a pair of "Helicopter" basketball sneakers. The TV commercial claims that the sneakers have "secret bounce gas" that helps you jump really high. And of course, you will look totally cool in them.

But when Arnold gets the sneakers he's been craving, he quickly learns that they aren't what they're cracked up to be. To make matters worse, an obnoxious kid from the sneaker commercial breaks through the TV screen and into Arnold's living room. Arnold has no idea how to get him back to the land of commercials—where everything is brand new and people are always happy!

Arnold is in for one crazy adventure, and so are you, as you read this hilarious story.

—*Diana Fisher*



S O F T W A R E

QIX

For *Commodore 64/128, Apple, IBM and Atari computers*

Taito Software, \$29.95-\$34.95

Qix (pronounced kicks) is the name of the game's weird whirling shape that bounces around the computer screen. It's your job to capture it without getting zapped. You do this by using your joystick to draw squares and other shapes that fill up the screen as much as possible.

Meanwhile, Sparx, Spritz and Fuses are other nasty objects that follow you around, getting in your way and causing trouble. Each time you complete a level, the *Qix* gets trickier and everything moves a little quicker. If you don't think fast and move fast, it will be a very short game.

Qix is a very strange computer program. There isn't another one like it. But we think it's fast-paced, challenging and fun!

—*Russell Ginns*



G A M E S

In The Dark

Parker Brothers

\$13.99

This new game is a combination of *Tic-Tac-Toe* and *Concentration*. Players take turns dropping colored marbles into tubes. The goal: To be the first to have four in a row going vertically, horizontally or diagonally. Sounds simple? Well, there's a catch. Once you've dropped a marble into one of the tubes, you can't see it anymore. To win, you have to remember every move that you or your opponent makes.

When you think you've got four in a row, flip the switch and the marbles will slide down to where you can see them. If you made a mistake and one of your marbles is in the wrong place, then your opponent wins.

In The Dark is easy to learn, but to win you'll need strategy and a good memory.

—*R.G.*



THE SLIPPED Disk SHOW

Howdy, hackers! Welcome to the Slipped Disk Show! I'm Slipped Disk, floppy disk jockey, world-famous computer expert and hi-tech weather forecaster.

That's right, in addition to all my other talents, I can predict the weather. For example, right now all the signs say we're in for a very cold March. (Well, not *all* the signs. Some of them say things like Eat At Joe's and No Parking.)

How do I know it's going to be cold? Every weather forecaster has a different method. Some look at the fuzz on caterpillars, others count the nuts that the squirrels have hidden away. But I know it's going to be a cold March when my dog Floppy starts stocking up on instant hot cocoa mix. Of course last year, I predicted a cold spring, and it turned out they were just having a sale on instant hot cocoa mix down at the supermarket. But you can't win them all.

And speaking of winning, this

letter is a winner. It's from *Eliza Huberth*, 11, of Monroe, New York. Eliza wants to know:

"Do computers use a lot of electricity?"

Eliza, my personal computer is always using a lot of electricity because it likes to watch TV, listen to the stereo and cook popcorn in the microwave, all at the same time. But most personal computers don't use

how much electricity computers use, they're very useful for predicting the weather. I use mine all the time as a weather vane. And speaking of weather, I wonder whether or not I know the answer to this next question. It's from *Craig Andrews*, 9, of Lubbock, Texas. Craig asks:

"Why are computers called binary?"

Craig, there's only one answer to your question and that answer is two. That is, binary means two and modern computers use a code that has only two symbols: 0 and 1. All the information in your computer and on computer disks can be represented by using these two symbols.

For example, the letter A in binary code is 01000001, while B is 0100010. Each 0 or 1 is called a bit. Each letter, numeral or symbol uses 8 bits. Together, those 8 bits make up one byte of information.

And that's all I'm going to bite off today. I want to get to the kitchen before Floppy eats all the little marshmallows in the hot cocoa.

Remember, no matter what the weather's like, we'll be back next month. In the meantime, watch out for blizzards (especially you folks in Hawaii), and if you have a computer question you want me to chew over, send it to me at:

much electricity at all.

The amount of electricity used by any machine is measured in watts. An Apple IIe computer uses 60 watts of electricity. This is the same as the wattage used by an average light bulb. Of course, this doesn't include the electricity used by the video monitor or television set or a printer.

By the way, no matter



THE SLIPPED DISK SHOW
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NEW YORK, N.Y. 10023

BASIC TRAINING

Programs For Your Computer

MONKEY BUSINESS

For Apple II Computers

Here's a program that will drive you bananas. It's called *Monkey Business*, and in it, your business is, what else? —monkeys! You've just been hired as assistant monkey feeder at the zoo on your first day at work. That's when you find out that your boss, the head monkey feeder, has left for a two-week vacation. Not only that, but he forgot to leave you any instructions.

Your job is to feed the monkeys and apes and keep them happy until your boss gets back. You have to feed each group the right kind of food and make sure that they get enough fresh fruit to stay healthy. If you don't, they'll leave and look for someone who is a better monkey-keeper.

Thanks to *Josh Rutgers* for suggesting this program. We think it's more fun than a barrel of, uh, um, well, it's a lot of fun!

To adapt this program for IBM machines, change all HOME statements to CLS. For **Commodore 64/128** change all HOME statements to PRINT CHR\$(147).

```
10 DIM MS(6,3),HS(5),N(6,4)
20 HS(1) = "OVERFED":HS(2) = "HUNGRY"
30 HS(3) = "STARVING":HS(4) = "SICK"
40 HS(5) = "GONE"
   D = 0:W = 2300
```

```
60 F = 3:G = 2:H = 1
70 FOR Y = 1 TO 3
80 FOR X = 1 TO 6
90 READ AS:MS(X,Y) = AS
100 NEXT X:NEXT Y
110 FOR X = 1 TO 6
120 READ AS:A = VAL (AS)
130 N(X,2) = A: NEXT X
140 HOME
150 D = D + 1: IF D > 10 THEN 920
160 GOSUB 980
170 PRINT : PRINT "WHAT DO YOU WANT TO DO?"
180 PRINT "(1) FEED MONKEYS"
190 PRINT "(2) GO TO MONKEY FOOD STORE"
200 PRINT "(3) QUIT"
210 PRINT : PRINT "CHOOSE ONE"
220 INPUT AS
230 A = VAL (AS)
240 IF A < 1 OR A > 3 THEN 170
250 ON A GOTO 470,260,950
260 REM FOOD STORE
270 HOME
280 PRINT "MONKEY FOOD STORE"
290 PRINT "YOU HAVE ";W;" DOLLARS"
300 PRINT "WHAT WOULD YOU LIKE TO BUY?"
```




```

310 PRINT
320 PRINT "MONKEY FOOD
    -$5 A BAG"
330 INPUT "NUMBER OF
    BAGS?";A$
340 F1 = VAL (A$):W1 =
    F1 * 5
350 PRINT "APE FOOD?
    -$15 A BAG"
360 INPUT "NUMBER OF
    BAGS?";A$
370 G1 = VAL (A$):W1 =
    W1 + G1 * 15
380 PRINT "CRATES OF
    FRUIT- $20 A CRATE"
390 INPUT "NUMBER OF
    CRATES?";A$
400 H1 = VAL (A$):W1 =
    W1 + H1 * 10
410 IF W1 > W THEN PRINT :
    PRINT "NOT ENOUGH
    MONEY":W1 = 0: GOTO 300
420 PRINT "YOUR PURCHASES
    ARE COMPLETE."
430 F = F + F1:G = G + G1:H =
    H + H1
440 W = W - W1
450 FOR DE = 1 TO 2500:
    NEXT DE
460 HOME : GOTO 160
470 REM FEEDING
480 HOME : PRINT "IT'S FEEDING
    TIME!!!"
490 FOR DE = 1 TO 1500: NEXT DE
500 E = 0
510 FOR X = 1 TO 6
520 HOME
530 Z = 2
540 IF N(X,2) - N(X,1) < 1 THEN
    Z = 1
550 IF N(X,2) - N(X,1) > 1 THEN
    Z = 3:N(X,4) = N(X,4) + 1
560 IF N(X,3) < 1 THEN Z =
    4:N(X,4) = N(X,4) + 1
570 IF N(X,4) > 6 THEN Z =
    5:M$(X,2) = "0"
580 IF Z = 5 THEN E = E + 1
590 PRINT "THE ";M$(X,1);" ARE":
    HS(Z)
600 IF Z = 5 THEN PRINT "THEY
    ESCAPED TO LOOK FOR
    FOOD": FOR DE = 1 TO 2000:
    NEXT DE: GOTO 840
610 PRINT "WHAT WILL YOU
    FEED THEM?"
620 PRINT "MONKEY FOOD?"
630 PRINT "INPUT NUMBER OF
    BAGS FROM 0 to ";F
640 INPUT A$:F1 = VAL (A$)
650 IF A$ = " " THEN F1 = 0

```

ILLUSTRATIONS BY MARTIN EISELMAN



```

660 IF F1 > F THEN PRINT "YOU
    DON'T HAVE THAT MUCH.":
    PRINT: GOTO 630
670 F = F - F1
680 IF M$(X,3) = "A" THEN 700
690 N(X,1) = F1
700 PRINT "APE FOOD?"
710 PRINT "INPUT NUMBER OF
    BAGS FROM 0 TO ";G
720 INPUT A$:G1 = VAL (A$)
730 IF A$ = " " THEN G1 = 0
740 IF G1 > G THEN PRINT "YOU
    DON'T HAVE THAT MUCH.":
    PRINT: GOTO 710
750 G = G - G1
760 IF M$(X,3) = "M" THEN
    780
770 N(X,1) = G1
780 PRINT "FRESH FRUIT?"
790 PRINT "INPUT NUMBER OF
    CRATES FROM 0 TO ";H
800 INPUT A$:H1 = VAL (A$)
810 IF A$ = " " THEN H1 = 0
820 IF H1 > H THEN PRINT "YOU
    DON'T HAVE THAT MUCH.":
    PRINT: GOTO 780
830 H = H - H1:N(X,3) = H1
840 NEXT X
850 IF E > 3 THEN GOTO 900
860 HOME
870 PRINT "YOU GO HOME AND
    GO TO BED."
880 PRINT "THE NEXT DAY, YOU
    WAKE UP AND GO BACK TO
    THE ZOO."
890 GOTO 150
900 PRINT "MOST OF THE
    MONKEYS HAVE ESCAPED."
910 PRINT "GAME OVER": GOTO
    960
920 PRINT "YOU DID IT!!"
930 PRINT "YOU MADE IT
    THROUGH 2 WEEKS".

```

```

940 GOTO 960
950 HOME : PRINT "YOU QUIT!!"
960 GOSUB 980
970 END
980 REM INVENTORY
990 PRINT "DAY: ";D
1000 PRINT "HERE IS YOUR
    INVENTORY:"
1010 FOR X = 1 TO 6
1020 PRINT M$(X,1);";";M$(X,2)
1030 NEXT X
1040 PRINT
1050 PRINT "BAGS OF MONKEY
    FOOD: ";F
1060 PRINT "BAGS OF APE
    FOOD: ";G
1070 PRINT "CRATES OF FRESH
    FRUIT: ";H
1080 PRINT "MONEY IN THE
    BUDGET: ";W
1090 RETURN
1100 DATA SPIDER
    MONKEYS,RHESUS
    MONKEYS
1110 DATA
    MARMOSETS,BABOONS
1120 DATA
    CHIMPANZEES,GORILLAS
1130 DATA 20,6,8,12,4,1
1140 DATA M,M,M,M,A,A
1150 DATA 3,2,2,4,3,4

```

SEND US YOUR PROGRAMS

If you've written a program you'd like us to print, send it in. If we like it, we'll print it and send you \$25. Include a note telling us your name, address, age, T-shirt size and type of computer.

All programs must be your own original work. We cannot return programs. Please do not send discs.

Send your programs to:





FACE OFF

Do you never forget a face? We challenge you to remember just three. Study the faces below for two minutes. Then turn to the Did It! page and see if you can answer five questions about the faces.

If you can answer three or four questions, you have a keen eye for details. If you can answer all five, then you're a master memory detective. If you answer less than three, it's back to detective school for you!



ICEWALK PART TWO

Now you too can be a polar explorer! Just find a path from Antarctica to the North Pole. Then journey to the Did It! page for the answer.





CAT SEARCH

In this issue, you read that cats are very good at hunting and landing from great heights. Well, they're also very good at hiding! How many hidden cats can you find in this picture?

The answer is not hidden, it's on the Did It! page.

ON LUCKY DAY!

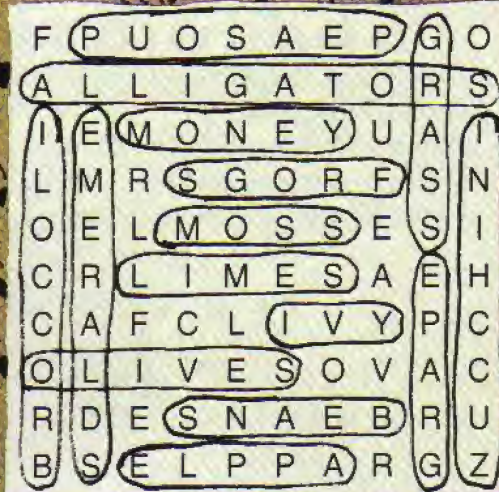
It's good luck to wear green on St. Patrick's Day, March 17. So this is the luckiest puzzle ever! How many green things can you find in our word search?

Words go up, down, across and backwards. Use our word list. Read the leftover letters, and you'll find something else that is very lucky.

Answer on the Did It! page.

FROGS	ZUCCHINI
BROCCOLI	APPLES
GRASS	IVY
PEA SOUP	MONEY
BEANS	
LIMES	
MOSS	
GRAPES	
ALLIGATORS	
EMERALDS	
OLIVES	

ILLUSTRATIONS BY RICHARD WEISS



Did it

FACE OFF QUESTIONS:

Are all three people smiling?
What color eyes does the top person have?
How many people are wearing glasses?
Do any of the people have a mustache?
Is the person in the middle looking to her left, to her right, or straight ahead?

TOASTBUSTERS COMIC

They will need 30 gallons of hot chocolate.

PERPLEXING PRETZEL PUZZLE



BOWL FULL O' FUN

There is one "A," two "B's," three "C's," four "D's," five "E's," and so on.

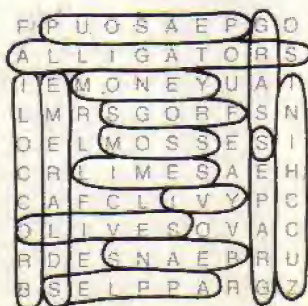
MAGIC COOKIE SQUARE

The striped, dino-shaped cookie will complete the following patterns:

Across 1 — white cookies Down 1 — squares
Across 2 — striped cookies Down 2 — dino shapes
Across 3 — black cookies Down 3 — circles

OH LUCK DAY!

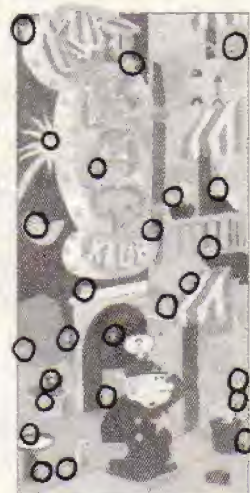
Answer: FOUR LEAF CLOVER



ICEWALK PART TWO



CAT SEARCH



DEAR TABBY

- 1) *Knee-deep*: Walk 1 — Sophie, Walk 2 — Bingo & Petey, Walk 3 — Bingo & Zorro, Walk 4 — Petey & Zorro, Walk 5 — Sophie.
- 2) *P. Charming*: Grizelda has size 7 feet. Edweena has 7 minus 3, or size 4 feet. Bertha's feet are 2 times Edweena's, or size 8 feet. So, the mystery woman could not have been any of them.
- 3) *A.I.*: Anything smaller than 200 half-pound rabbits would have to be less than 100 pounds ($200 \times 1/2 = 100$). So, the answer is the chimp.

NEXT MONTH

Here's a look at some of the exciting stories coming your way in the April 1990 CONTACT:

HEALTHY HORSES

When you get sick, you go to a doctor. When a horse gets sick, it goes to a doctor, too! Visit a hospital that's just for horses in this behind-the-scenes story.

SCIENCE MYSTERY

Eighty years ago, a mysterious explosion took place in a remote part of the world. It was heard by people hundreds of miles away. Scientists are still puzzling over this mystery of nature.

PLUS

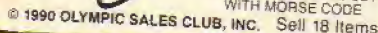
SQUARE ONE TV

THE BLOODHOUND GANG
AND MUCH, MUCH MORE!



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